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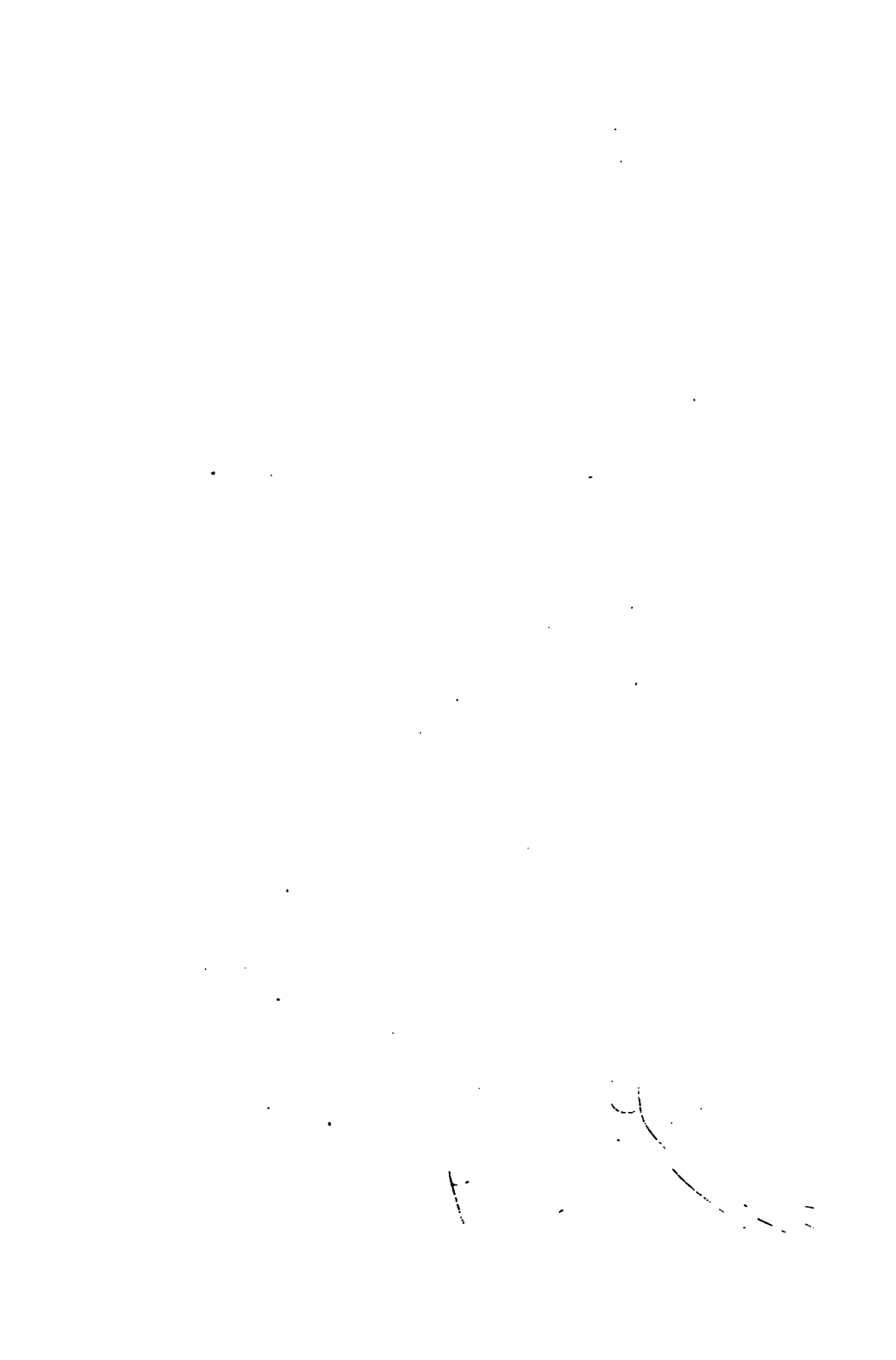

TRUTH AND REALITY

AN INTRODUCTION TO THE THEORY OF KNOWLEDGE

BY

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To

MY FRIEND AND TEACHER

WILLIAM JAMES

NOT THE LATE BUT THE EVER LIVING

AND INSPIRING GENIUS OF

AMERICAN PHILOSOPHY

THIS BOOK

IS AFFECTIONATELY DEDICATED

PREFACE

IT is my hope that this volume may serve a purpose as an introduction to the theory of knowledge. While we have pretentious works covering the field of logic and epistemology, we are not so well supplied with books giving a general survey of the main problems involved in the investigation of truth. The time seems peculiarly ripe for such an effort. In the bewildering amount of discussion and misunderstanding to which the pragmatic movement has led, there is need for fresh emphasis of the main issues. There is also need for building out the pragmatic theory in neglected directions. In a small way, this book tries to serve both purposes.

This book is intended to be used in connection with a course in elementary logic or as an introduction or sequel to it. It is hoped that its human interest will also make it available for the general philosophic reader and as an introduction to philosophy. To the cultured public, not technically trained in philosophy, the first and the last chapters may be of special interest.

My relation to the pragmatic movement will be clear enough in the course of the text. It may be of interest that the larger part of Chapter XVII, "The Reality of Religious Ideals," was given as a lecture at Harvard in 1899, practically before the movement had started. This direction of my thought was in part due to the influence of Fichte and Herrmann's *Religionsphilosophie*, in part to

my personal relations to William James. My going on with the work in the last few years is altogether due to the clarifying influence of the pragmatic movement.

I may say here that this volume will be followed shortly by another on metaphysics entitled *A Realistic Universe*, where some problems suggested in this book will be dealt with more fully.

I am under obligation to the following journals for permission to use in whole or part material which has appeared during the last few years. Chapters I, IX, and XIV have been revised from the *Monist;* Chapters II, XI (Truth and Meaning), and XII from the *Psychological Review;* Chapters VII and VIII (printed as the Nature of Truth and Discussion) from the *Philosophical Review;* Chapters X and XV (published as Truth and its Object) in the *Journal of Philosophy, Psychology, and Scientific Methods;* and Chapter XVII from the *Harvard Theological Review.*

To my friends and colleagues, Professor S. L. Whitcomb and Professor E. C. Wilm, I am indebted for reading the proof, and for many valuable suggestions.

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PART I

TRUTH AND MENTAL CONSTITUTION

TRUTH AND REALITY

CHAPTER I. INTRODUCTORY

Philosophic Tolerance

To-day as I sit before the warm grate fire with the snowflakes falling outside, I feel in a peculiarly dreamy and charitable mood towards all mankind, especially philosophers. Perhaps I have what Dooley calls the Carnegie feeling. At any rate there jar upon me more than usually the petty nagging and jostling and rushing to the patent office in the philosophic camp, as though one small head could carry all of truth, or as though one expression of truth, however comprehensive, could be more than a passing phase of experience as a whole. Considering the variety of human nature as a result of evolution, why should it not require an indefinite number of systems to express human nature in the various stages of its development and in its various moods? And why are they not all true, in so far as they are really genuine and really express human nature then and there? Philosophers, above all people, need open-mindedness and a sense of humor. Dogmatism has erected the stakes and the gibbet for those who have ventured on any new path, while philosophy must always breathe the air of freedom, and has always proved wiser in its hero-worship than in its persecution.

This brings to my mind an occasion in one of the temples of Boston, made more venerable in its associations since then. It was a discussion of educational ideals at a meeting of a brilliant group of educators. It was a Babel of many tongues, one saying: It is this way; another: It is this; one saying: Come to us, we have the latest; another: Come to us, we have the most venerable; another one: Come to us, we have the best equipped bazaar of learning. I remember President Eliot rising at the close of the discussion, and in his dignified simplicity gleaning in unadorned eloquence the wisdom of the day. I do not remember his exact words, but the import of them was something like this: "Education is at present in its experimental stage; and in the meantime it is best that each experiment should be carried out with the greatest possible consistency under the best conditions. Harvard has stood for a system of free election in its college course. It is well that a system of required work, under the best conditions, should be tried somewhere, at Princeton perhaps. Thus future generations shall be wiser for our experiments." It struck us all as so eminently sane.

Why is this not true, to an even greater extent, of philosophy, the science of the meaning of it all? Why should we not welcome and encourage different experiments? Is not philosophy, and must it not always be, in the experimental stage? One of the few fragments which have survived from the brilliant author of the *homo mensura* tenet is: "In respect to the gods, I am unable to know either that they are or that they are not, for there are many obstacles to such knowledge, above all the obscurity of the matter and the life of man in that it is so short." Why should not this brevity of life and the complex and

changing character of our world teach us modesty in the ultimate matters, where our little lifetimes and limited points of view must be supplemented by other lifetimes and other points of view, and where the checkered mosaic of truth never can be completed? Truth is at best experimental, and nothing can be more fatal than stopping the experiment. The most that will be said of any of us in the ages to come is: Yes, he saw a phase of the problem; or he proved suggestive in the infancy of the science.

I, for one, though I have elsewhere urged a *Weltanschauung* of absolute time and realistic pluralism, want to see the experiment of absolute idealism carried out with the best psychological and methodological advantages, and I confess, rabid realist that I am, that in some moods, in which my passion for permanence and unity asserts itself, I take comfort in absolute idealism, or at least like to play with it. There is a certain intellectual coziness about absolute idealism for which I sometimes long. I want to close the accounts and find how things stand, or at least feel sure that somebody knows and that no evil can befall my ideals. But again, in other and with me more prevailing moods, this esthetic craving gives way to the respect for facts as they seem, to the longing for action and risk; and I sometimes revel, in imagination at least, in the daring and courage of helping to make an unknown future, in which my plans and I myself may prove unfit. A fair field, I say, and no favors, not even for my own pet theories. There are other moods, too; and only God knows which is the truest in the end. Ideals may prove truer than facts.

We are told of the Chinese that he has several religions, a different religion for different functions of his life. As

a public official and statesman he is a Confucian, this being a religion of ideals for public life. Again, Buddhism supplies the need for ritual, and furnishes a larger religious setting; while Taoism, with its forms of magic, satisfies the more primitive folklore side of Chinese nature. Besides these there are various local cults. The state recognizes the place these various religions have in Chinese life by supporting them. This condition of things causes no end of trouble to the Western census taker, and is very difficult for us sectarian Occidentals to understand. But why should we insist so persistently on fitting human nature into one arbitrary mold for the sake of conventional consistency? Why should we not have recourse to different forms of religion and different systems of philosophy, different universes of appreciation, according to the varying moods and needs of the soul? Why should not institutions, which after all are our creations, be made to serve us, instead of our being enslaved by them?

Here I see the poetic sanity of Plato, which has troubled his stupid and stereotyped commentators so much. The secret of the difficulty of unifying Plato, over which so many have stumbled, is that Plato's philosophy varies with his poetic moods. He, as no other philosopher, coins his own soul; and therefore he has continued to speak to the soul of man as no other philosopher. Each dialogue is a *Weltanschauung* by itself. Most moods seem to fit the overshadowing, large-hearted, and sane personality of Socrates; but in other, more abstract moods, the cold personality of Parmenides or Zeno seems more fitting. We have not Plato, but a mosaic of the rich life of Plato. Why should not every sincere man express his life in a philosophy that seems reasonable to him at the time, fits

experience now? It is easy enough for the man who deals in mere verbiage to manipulate continually the same identical counters, but not so with the man who expresses himself. Thus not only man, but the different moments of man, become the measure of all things; and the Sophists, had they been shrewd, might have pointed to the plastic nature of Plato as the best illustration of their theory. Agreement and sameness are practical necessities for the sake of common action, but outside the elementary qualifications for social life they are the bane of progress.

In art and poetry conventional limitations have been less effective and made it less difficult for men to be sincere with themselves. We do not demand rigid consistency here. We are disappointed at mere repetition. We look for a different mood of the soul in every new work of the artist. Here human nature has been able to find a more varied and genuine expression for its complex and varying tendencies, and we who enjoy the art find here a varied supplement for our varying inner attitudes. Here it is not a question of *either or;* there is no need here of finding a common denominator of different types, though silly would-be art lovers will insist on nauseating one with such questions as: What is your favorite painting? your favorite poem? Poor one-horse souls. In the realm of poetry and art we have a right to have our whole nature ministered unto, to live in an infinite number of universes. In one mood we want lyric sweetness, dreamy romance, Shelley and Keats; in other moods we crave for the searching of tragedy, for something that will appeal to the deeper self within us, and so we ask for the Antigone and Hamlet and Othello. Again we want something that appeals to the heroic, that satisfies the boy within us, — and he is

always there, even in the oldest of us, — so we take up Homer. What is the use of taking a vote on the world's greatest poem? The greatest for me is that which expresses my soul most perfectly at the time. Why should I not enthrone each one to an exclusive place in my soul according to my needs, as the ancient Hindu enthroned Indra and Agni and Varuna in turn? There is no poetic Absolute unless it be the freedom of enjoying the varying expressions according to the varying moods.

What is true in poetry is equally true of art in the narrower sense. Why should my admiration for the Sistine Madonna prevent me from enjoying other Madonnas of Raphael, different moods of his soul? And why should my love for Raphael prevent me from loving Millet and Corot? Why should I try to find a common denominator for a Madonna and a Sunset? My soul needs them both; and my love for one does not fill the place of the other, any more than my love for Beethoven's symphonies fills the place of Schubert's songs and Bizet's Carmen. To be sectarian here is to have no music in one's soul and to be fit for all the villainous things of which Shakespeare speaks.

And why should a man's soul be crowded into one system of philosophy? The ultimate realities with which metaphysics deals are no less plastic in the hands of the potter than the realities of art. In either case the soul is endeavoring to create an objective counterpart to its tendencies or needs, to mirror itself, become conscious of itself, and so to create anew its meaning through the expression of itself. Philosophy, like poetry and art, when it is genuine, is only the expression of a mood of the soul, and it is not always for the artist to tell what mood

is most significant. Let each one, then, in the moment when he feels the impulse to create, "from his separate star draw the thing as he sees it," not only once, but again and again, as he feels the impulse to express himself. Let the soul create its belief-worlds as its own needs demand, wrapping its belief-mantle around itself to make itself cozy in the world, whether to lie down to pleasant dreams or to face a sea of trouble. In the realm of truth, as well as art, man must be the measure, however finite and passing the measure may be. All sincere expression, therefore, is worth while. History will see to it that the fittest survives. At least, he who has expressed himself genuinely has become repaid by the insight gained in his own expressive act. If human nature in his case is rich and deep, as well as sincere, the expression becomes significant not only for him, but for others as well, a creation of new social values. The expression of human nature, whether it is a measure of the universe or not, is always a measure of the individual soul that expresses itself. The reason that philosophy has exercised so small an influence upon the world, compared to poetry, art and religion, is that it has often been a matter of verbiage, with no real soul back of it. Philosophic meaning, then, like artistic and poetic, is a mosaic of points of view, of belief-worlds, rather than cut out of whole cloth or according to one pattern. Whether we will so or no, our moods and our lives are phases merely of the whole process of reality, and our belief-worlds are phases of the total meaning. At best the objective counterpart of our inner attitudes is a very fragmentary expression of what we feel and mean. Hence it is right that philosophy should have its Plato as poetry has its Shakespeare; and philosophy needs its Walt Whit-

man, too, to reduce it to what is elemental and make it sure of its sincerity. "Make thyself new mansions, oh, my soul," must be the motto of philosophy. Let the architecture be Greek or Gothic, or both, as the soul may require. The history of philosophy is a picture gallery in which we can study not only the history of thought, but the history of ourselves, and through sympathy with the past become conscious of our own meaning in our various moods.

To-day, therefore, I feel that I want to be Chinese in my homage to philosophy as I already am in poetry and art. I like to visit sometimes, in the company of my friend Royce, a beautiful Greek temple built according to Plato's Idea of the Good. It is wonderfully complete and satisfying, carried out after the plan of one master artist according to perfect mathematical models, frescoed in an infinitely varied pattern, in which the past, present and future are set in wonderful mosaic through the immortal artist's cunning. And withal the soul is filled with such sweet harmony as to forget for the time being its limitations and its longings. You can only gaze in rapture and wonder at the beauty of it all. So impressed was I that I turned to my friend and asked: What can I do? He replied with a smile at my impatience: Only enjoy the eternal beauty of that which is. And it was wonderful for a time to dream there, while I could keep quiet and until my old restlessness returned. But I fancy I shall sometime steal in again for another quiet hour, to see Hegel gazing at his chart of logical categories, Augustine in mystic devotion, and the transfigured countenance of Plato.

But sometimes I like to worship in another temple, very unlike the one just mentioned, bare and simple in the extreme. It is the temple of Democritus and Priestley and

other stern and heroic souls. A temple did I say? Yes, for its devotees were filled with a tremendous reverence and enthusiasm. Yet no ornaments were there, nor roof nor walls. Only a pile of rough-hewn rocks in the wilds of the desert, exposed to the storms and snow and sleet in a climate of perpetual winter. For moments the sunshine would break through the gray clouds and make the landscape sparkle into diamonds and crystals of icy grandeur. But those that worshiped there counted it as naught. They watched the wreaths of sand as they rose in many a whirl, or the fall of the snowflakes, and made records of it all. On the altar were two idols, cut out of granite, — Simplicity and Necessity, grim to look at. To them they offered, to my horror, human sacrifices, their own children. But so the idols craved; and many fond hopes, many warm desires, many tender sentiments went up in smoke on the rock-bound altar. As I stayed I became impressed with the absolute democracy of the religion — the democracy of absolute poverty and absolute law — and their willingness to sacrifice all to what seemed to me mere idols.

So impressed was I with the simplicity and sternness and cold awfulness of it that my inner self seemed to shrink within me to a mere ghost of its former puffed-up state. I felt so impressed with the uncompromising, relentlessly democratic character of the forces of the universe and my own insignificance as a finite individual, that when their priests told me that to please their gods I must sacrifice all that I loved, I threw into the fire many of my conceits, many subjective broodings and many a petty desire — but not all that I loved, and so I could not become a member of the fraternity. But sometime, I dare say, I shall go out again into the wilds, where I can feel the tonic of the

north wind and admire again the bleak solemnity of the scene.

But I could not stay there always. I need to get back to the society of Kant and Fichte and Browning and the rest who have felt that circumstance is to some extent plastic in the service of ideals and that we shall not utterly perish, at least not without having our say. The temple where I spend most of my time is an unfinished Gothic sort of structure, where many artists are at work, each in his own way. I was introduced to the group by a friend of mine, the brilliant and human William James, who spent a lifetime trying to provide a framework, and who is now at work on some plans for the interior. It is a place where everybody has something to do. Each one is allowed to choose his own task, make his own plan and fix his own salary. There is no supervision as yet; in fact the plan is that there shall be no supervision of the work as a whole. This is looked at askance by outsiders, and mutiny is prophesied. What can be the worth of the work thus pursued? And how can a man be allowed to draw on the universe according to his own estimate? A system of grading has been suggested to ascertain the fitness of plan and work. But so far no available tribunal has been found except the succession of workers themselves and what appeals to them. Each artist is thus his own judge of fitness, and when he is superseded, there seems to be no guarantee that his work will be carried on. But as the workers are conscious of each other's plans, and as new artists serve apprenticeships under old masters, it is expected that there will be a degree of continuity and unity.

But after all, the center of interest in this religion is not the temple, but the artists. The temple may never be

finished, as each artist and each generation of artists modify the plans to suit their own ideals. But the artists get practice, and the temple is first of all a school for artists. And each artist is paid at least through the joy of the working and the appreciation he feels for such momentary beauty as he can produce.

Here at least the artist has the sense of doing something, for in the other temples there is nothing to do but contemplate that which is, whether beauty or desert. Here worship is work and work is worship. Perhaps somehow, somewhere and sometime his work may mean more than he knows. Perhaps an unseen Artist may be piecing together from moment to moment the scattered fragments of our insight. If the artist gets disheartened, and if his work and fellow-workers do not offer sufficient encouragement, with the strenuous Kant working away at the fresco of his dark corner, and young Fichte with untamed enthusiasm trying to boss the job, and the lovable James preaching his favorite principle of pragmatism, and other heroic souls, "each in his own tongue"—if all of these sometimes fail to please, and work becomes irksome, let him go into the temple of beauty, in the fairy land of summer, and rest awhile. And if he gets too absorbed in his own plans to be tolerant of other workers, I should advise him to go out to that lonely rock-bound altar in the wilds, and there learn to sacrifice his subjective conceits and to respect law and order.

In the absorption of my meditation, the glowing coals of the grate fire have turned to ashes. The snowflakes have ceased to fall; and the brisk zero temperature beckons me into God's out-of-doors. The spell of revery is over; and instead of dreamy sympathy, I feel the call

to stern activity — to conquer the world in my own Norse way. I realize now that whatever our moods and sympathies, they do not make our ideas come true. This must be tested by their ability to lead us in the direction of the intended facts — to guide conduct. But I hope that I shall not forget after to-day that I, too, am a being of moods and temperamental limitations; and that in the gentle school of friendship and appreciation I may be the better able to discriminate sanely and create truly.

We should be tolerant, not because there is no such thing as truth, but because, under the limitations of human nature, it is important that

> Each from his separate star
> Shall draw the thing as he sees it
> For the God of things as they are,

so he does it conscientiously, using all the cautions that the technique of truth provides. The race, in its historic experience, will eventually pass upon the individual insight, and reject or incorporate into its institutional network, according as it explains or simplifies life. Even now we like to think that somehow, somewhere, there is a personality, whose insight is as wide as the facts; whose sympathy can embrace the variety of nature and human nature; and whose sanity can give each tendency and mood its proper place, in the infinite perspective of history. To this ideal Socius, however incomprehensible his existence, we must finally entrust our fragmentary insight. But we half-men, while we struggle and see through a glass, darkly, should at least make our tolerance as large as our ignorance.

CHAPTER II

Mind as Instinct

The thesis I wish to maintain in this chapter, for purposes of simplification, is that all of our fundamental adjustments or categories, viewed from the point of view of individual development, are instinctive or organic adjustments; that the stimuli, which constitute the environment, are simply the occasion for calling into play the structural tendencies of the organic growth series, and that such categories as recapitulation, imitation, and accommodation are pseudo-categories, stating certain results from the point of view of another consciousness, but not explanatory of the real process of consciousness. This I believe to apply to the whole history of individual consciousness, and not simply to its initial stages. If this thesis is true, progress must take place through spontaneous variations and natural selection, though tendencies must be made definite and effective through external stimuli and the process of experience. The possibility of education is determined by our evolutionary heritage. Whether natural selection alone or other agencies must be called in to account for this heritage, we must leave open here. Natural selection, at any rate, is evident enough both in society and nature; and it must act upon such grist as spontaneous variations. Some of these variations, the mutations, in the process of heredity evidently stick.

The old idea of the evolution of consciousness as a con-

tinuous series, statable in terms of simpler processes from which the more complex were supposed to be compounded, has gradually become a thing of the past. Sensationalism, simple and plausible as it seemed, has been proven inadequate, and psychology is now looking not to chemistry, but to evolutionary biology, for its cue. The reason for the discontinuity of the psychic series or its leaps and starts is that psychological process waits upon biological structure; and only when the biological conditions are complete do the new forms of consciousness leap forth as mysteriously as the wonders in rubbing Aladdin's lamp. The lamp is the thing, and just that kind of lamp, though of course the magic result would not follow unless the lamp were rubbed. With the perfection of the mechanism of the eye, and the complicated structural conditions for sight, light leaps into being. So with the mechanism of the ear and the wondrous world of sound.

The stages of consciousness are abrupt, however graded may be the development of the structural conditions. First of all, whether there is prenatal consciousness or not, consciousness waits upon certain antecedent structural conditions before it appears at all. Before the appearance of consciousness the fœtus, in response to certain stimuli of temperature and blood supply, has already unfolded a structural series embodying the revolutionary results of variations and survival of untold ages. But the unfolding of structural characteristics does not stop with the appearance of the first vague consciousness. In obedience to stimuli, intra- and extra-organic, the organism continues to grow and to develop new structural characteristics, and as the structural conditions reach certain stages of complexity there appear new forms of conscious response. Let us for

our purpose state the dramatic stages as three? First, sensitiveness or immediate consciousness; secondly, associative memory and expectancy; thirdly, reflection, the analyzing out or making focal, to use Lloyd Morgan's term, certain relations and abstracting them for the better manipulation of the concrete situation. Now the thesis here maintained is that the successive appearance of each of these stages of development, with all their intermediaries, is equally organic and abrupt, the unfolding or growth of a structural series in obedience to certain stimuli, which do not make the series any more than the heat of the incubator makes the chicken, but which are simply the conditions calling forth the series; the stages of development from first to last, as well as what stimuli are effective, being determined by the nature of the organism, which again is what it is as a result of spontaneous variation and natural selection.

It is wrong to suppose with many recent psychologists and biologists that the human brain is essentially unorganized and that the environment organizes it. The environment, whether physical or social, can only furnish stimuli. The human brain has far more complex structural tendencies than that of any other being. But while the brain of the animals below man has a comparatively short dynamic span and the few instincts appear practically together and mature shortly after birth, the human organism has a long dynamic span, with an organic series of instincts maturing in a certain order. Natural selection has here provided for an hierarchy of instincts. But the law of development is the same: a certain congenital structural order unfolds itself in response to certain stimuli. That this structural development is in response largely to post-natal and extra-organic stimuli in the human being does not alter

the instinctive character of the process. If we define instinct as a response to stimulus determined by congenital structure, then we may reduce all the stages of mental process to the category of instinct. The only question is as between earlier and later or simpler and more complex stages of instincts. What must not be forgotten is that the growth order of our instincts, as well as the number of our instincts, is congenital.

Nothing fills me with more amazement than this provision of nature for a growth span, in which the series of instincts is called forth in its due order at the beck of the environment. The first great departure which nature makes from the animals, where maturity sits close on birth, is to stretch out the period of infancy. This permits the nervous system, with its capacity for habit and memory, to develop in the presence of the stimuli upon which it must act, instead of starting ready made. With this equipment and this prolongation of growth, nature makes necessary the first great social institution — the family. But nature does not stop here. In order to provide for the proper staging of the ideals and sentiments, so indispensable for the complexer demands of civilization, nature splices in the period of adolescence, with its emotional plasticity, its enthusiasm and loyalty; and this period is being ever prolonged to meet the increasing social demands for adjustment. How it is that a growth order can be inherited, and in what way the seemingly indefinite protoplasmic material can develop in mere response to stimuli a series of tendencies, is as dark as is the problem of causation generally, and of transmission of characteristics at all in particular. We do not doubt, however, the innateness of the sexual response, though it is conditioned in the case of a human

being by a complex and long series of structural growth. This one instance ought to convince us that the survival variations operate not only sectionally, but longitudinally in the stream of development. The absurd supposition of the English empiricists that innate is synonymous with that with which we are born and that the rest is acquired, is once and for all exploded by biology. Development before and after birth is due alike to an inner structural tendency unfolding in response to stimuli.

To suppose, therefore, as contemporary psychology still largely does, that the higher mental activities are complications of lower activities; that, for example, associative memory is simply the result of sensations and habit; that concepts are only a specific kind of mechanical association, and that thus the higher strata of experience are built right up from the lower, is simply substituting chemical metaphors for explanation. If images were the complication of sensations merely, why is it that some of the animals lower in the scale, which show signs of sensation and habit, never acquire images? They must have sensations enough — probably a larger variety than Helen Keller. And, again, if concepts and judgments are simply associations, why is it that animals with complex associative mechanism do not show any sign of abstract analysis? It is surely not the fault of stimuli, as they are surrounded by the same world in which we exist, hear the same sounds and have the same variety of light and color. The higher types of reaction are not compounded out of the simpler, though they may presuppose these. They are the result of structural development, not merely of functional adaptation. Given the inner structural equipment, and we cannot help remembering and reasoning, when the proper

stimuli are furnished, but without that stimuli are of no avail. Let us now inquire a little more in detail into the stages of instinct.

STAGES OF DEVELOPMENT AND THEIR CHARACTERISTIC INSTINCTS

Each of the stages or leaps of development mentioned above, sensitiveness, associative memory and reflection, has its own characteristic instincts, which emerge with the structural growth of which the above stages of consciousness are the coefficients. I do not deny that there are intermediary stages less dramatic, but those we can afford for our purposes to neglect. Nor must I be understood as holding that associative memory and reflection are in any sense creative of instincts. On the contrary, the later instincts may be said to be creative of them. They are simply the structural machinery which has proved serviceable, if not essential, in the unfolding of certain instincts, and hence this machinery has been grafted on the instincts or become congenital.

1. *The Sensitive Stage and the Primary Instincts*

The instincts on the sensitive stage, and before that on the merely physiological, are relatively simple and general in character. They correspond to a relatively primitive environment.

Looked at from a later point of view they are altogether egoistic, *i.e.*, they have to do with individual preservation, in the way of defensive and food-getting series of reflexes. An intricate series of structural adaptations has become purely mechanical when we have a chance to observe,

such as the machinery for digestion, circulation, breathing, etc. If natural selection, acting upon spontaneous variations, has been able to perfect such a network of interrelated processes, with such continuity of operation as we find, for example, in digestion, from the preparatory seizing, deglutition and swallowing until the substances are converted into blood or carried off as excrement, we ought not to be staggered at the thought that our adjustments in general are a chain forged by natural selection and simply rattled off by the environment, making due allowance for the mechanical character of this figure.

The instincts that are usually credited to a human infant are such as grasping, sucking, crying and sneezing. A comparison is drawn between the human infant and the chicken, for example, to the advantage of the latter. That is misleading, however, as the human chick is still being fledged in response to external stimuli. Thus the development of sense and motor coördinations, and the coördinations of the senses with each other during the first weeks of the human infant, are no less instinctive, though they take place partly in response to extra-organic stimuli. It is the growth series of the organism that produces the instincts. The extra-organic stimuli stand in no different relation to the child than do the prenatal stimuli to the chicken. The superiority of the child's development lies in the larger range of its stimuli, not in its less instinctive character. The same may be said of the more complex motor coördinations for walking. These are not learned by experience. They developed even when an absurd system of swaddling clothes prevented functional adaptation. So with the development of speech. The conduct of the garrulous human environment merely furnishes stimuli for

more definite response by the developing speech centers. The human being is simply a long time being fledged. We may say that the infant reactions at the outset are more general than those of the chicken, though here too we have to be cautious, as the reactions of the chicken are probably much more general than was supposed by early investigators. The chicken, according to Morgan, does not have a special response for the hawk, though it has a certain response for a certain *kind* of stimuli that cause instinctive terror.

If we look at the conscious side of the more primitive instinctive adjustments, we find ourselves on a rather speculative foundation. Where consciousness is not efficient, its presence must naturally be conjectural, and a large number of reactions not only in the lower animals but in human beings can be treated as tropisms. The going off of the early instincts is largely a penny-in-the-slot affair, to use Lloyd Morgan's figure. Consciousness is at first at most a spectator. If consciousness is present, the proper working of the slot is accompanied by a pleasure value, the improper by pain. Thus likes and dislikes, on one hand, and reactions, advantageous and disadvantageous to the organism, on the other, tend to coincide. But it would be wrong on that account to regard pleasure-pain as legislative in the evolution of instincts; for, on the one hand, complex structural adaptations exist which seem purely physiological, and, on the other hand, where pleasure and pain now indicate survival value, it is simply because, as a result of the sorting of natural selection, they have survived. Where the environment changes rapidly and where the law of natural selection has not chance to operate, pleasure and pain are not sufficient guides. Wit-

ness the cows transplanted to South America, which took pleasure in poisonous weeds, and the birds on the South Sea Islands spoken of by Darwin, which lacking the instinct of fear toward man paid the penalty until they either were exterminated or established the instinct. Witness, too, the large number of pleasures in human beings, such as indulgence in opium, alcoholic liquors, and various forms of sexual excess which are pernicious and on which the law of natural selection has yet failed to operate. Pleasure and pain have indeed become a vital part of the functioning of some instincts, though of others not. It surely would be absurd to try to state our primary instinctive reactions in terms of mere subjective teleology, as some seem inclined to do at present.

The stimuli which make the slot work may be qualitative differences, such as loud sounds or brilliant lights, or they may be behavior stimuli, which call forth similar movements in the individual. But in either case we have simply a stimulus as setting off a congenital mechanism. The reaction on behavior stimuli is sometimes called imitation. But this is the significance of the reaction to the psychologist, who compares it with the behavior stimulus. It is not imitation or accommodation to the child or animal. It is simply a case of a fascinating stimulus, which is only another name for fitting the slot and the slot going off. Interest always waits on tendency. If the child prove to deviate or to be original in its imitation, from the spectator's point of view, that is because it does not imitate but responds to the stimulus in a way dictated by its structural tendencies. If it continues the process, that is not for the sake of approximation, but because given such structural tendencies it cannot help repeating the conduct. The con-

scious imitation of a copy marks a late stage in human development.

Sometimes instincts are explained as recapitulation, and they do indeed have a long survival history back of them. But to call them recapitulatory is again the point of view of the external observer who compares the reactions with those of ancestors. The individual on the level of sensitive consciousness at any rate does not act to recapitulate his ancestors. The spring for the action must be found in his own organic machinery, whether it agrees or disagrees with that of his ancestors. There is no such thing as evolution in the sense of simply marching the old categories upon the stage again as implied in recapitulation. The machinery for imitation, accommodation and recapitulation exists only when the individual has in mind a copy of the behavior of others, whether past or present. But even on that level the springs for the action must be sought in the individual structural tendencies. He does not imitate because of imitation or recapitulate because of recapitulation, but because he is wound up in such a way that such stimuli appeal to him or set him off. Such categories as imitation, accommodation and recapitulation are not explanatory categories; they are simply comparisons as made by an observer external to the process. They are pseudo-categories.

Instincts, on the sensitive level, are made definite by trial and habit. The instinct puts forth a succession of efforts to attain its vague end. These efforts are first random. By a law, as organic as instinct itself, the successful efforts are emphasized by the organism; the unsuccessful are weeded out, until gradually a definite habit is forged.

2. *Associative Memory and the Secondary Instincts*

While the stimuli are playing the primary tendencies and under the shelter of the parental and other social instincts of the individuals of its immediate environment, the organism is busy perfecting the structure for the later instincts with their more complex machinery. These we may call secondary, though that does not mean that they are less instinctive. They only presuppose a greater structural differentiation. Lloyd Morgan speaks of the mother hen protecting the chick from the law of natural selection. That is true in the chick's individual capacity, but we must not forget that it is as a result of natural selection that the parent has its parental instincts which shelter the newly developed chick. Before the chick has social feelings it has the shelter of social feelings. Else there would be neither hen nor chickens to survive. Natural selection has operated to produce a group supplementation of instincts. It can thus telescope the undeveloped structure into the later structures of other individuals, at the same time providing in the behavior of the more developed members of the group the stimuli to call off the dynamic tendencies of the immaturer developing structure, thus lengthening the dynamic span and increasing its developmental possibilities.

It must be remembered, however, that the social environment occupies exactly the same relation to the developmental series as the physical. It can only furnish the occasion or stimuli for setting off the dynamic series. There is no social heritage in any other sense than there is a physical heritage, a set of stimuli, pennies for the slot that will make it go off, if they fit. Social institutions, like

physical stimuli, must be the counterpart of our instinctive tendencies to be of significance for us. They must be our inner needs and dispositions objectified, if we are to find ourselves in them. Else they become a handicap, not stimuli for our self-development. They must play the growth scale of instinct in its proper order; or we must develop, as best we can, in spite of them, not because of them. Indeed there could be no stronger testimony to the innate character of mind than that in spite of all the abuses of our unpsychological methods of education — the abstractions of the alphabet and the multiplication table — the human mind develops true to its nature.

Looked at from the point of view of race history, the mechanism for associative memory must be regarded as a lucky variation or an accumulation of variations which make it possible to live an experience again, given an internal or external cue; which make it possible, therefore, to guide the present beck of stimuli with reference to consequences of past experience, thus making instinct more definite and serviceable, a reaction on particulars and not merely on a vague kind. The survival value of such an organic leap must have been momentous. For whatever history of accumulations of survival this machinery may represent on its structural side, from the point of view of consciousness it is a radical leap. There is no way of reducing efficient consciousness into simply more consciousness of the concomitant or spectator kind; no way in which the play of immediate impulse with its simple machinery of tedious trial, gradual elimination, and dumb, monotonous habit can be made to yield a picture of the past result and a short cut to reaction on the basis of it. Using the penny-in-the-slot illustration again, a new mech-

anism has been introduced into the slot that not only makes the slot register its going off, but also uses as guide the structural picture in its next going off.

But the new machinery is still essentially a slot. It is conditioned through and through by organic tendencies: organic tendency in the form of instinct conditions interest; organic tendency in the form of habit makes dynamic continuity possible; and organic tendency as specialization of structure conditions the kinds of imagery or content the operation shall have. While the machinery, therefore, is vastly more complex and immensely more efficient in its greater scope of coördination and its greater economy of effort, it remains as organic or instinctive in character as before.

With the perfecting of the machinery of associative memory there leap into being in their proper order a totally new group of instincts, the social instincts. While these instincts are conditioned by the more complex structural machinery, that does not mean that they are the result of associative memory. The latter might make us more efficiently egoistic, but could not change our fundamental attitude. The social instincts are rather the *rationale* of the more complex machinery than *vice versa*. Only thus could the social instincts become efficient. But with these instincts and the associative mechanism the individual is equipped for the beginnings of group life with new possibilities and necessities of survival variations.

That associative memory and the fundamental social instincts are interdependent is shown not only by observing the coincident appearance of the two in the development series, but more conclusively by the vivisectional and pathological methods. In the experiments of the removal

of the hemispheres of the dog, the pigeon, and the frog, for example, it has been shown that all social, which here means primarily sexual, response vanishes, together with associative memory. The same is shown in widespread injury to the human brain, in such a case as that cited in Huxley's essay on Animal Automatism, and in the recent case in Paris of a human being born without hemispheres. If we regard the matter merely logically, it is hard to see what social could mean apart from representation, though representation can be conceived without sociability. But while the social instincts thus wait upon a certain structural development, that makes them no less organic and fundamental in nature.

There are, properly speaking, no such things as social categories. Imitation, sympathy, the whole list of sexual, parental and more general group responses, constituting social fitness, must be reduced to individual variations, which have proved to have survival value and which in turn have come to condition the survival of individuals exceptionally lacking or over-redundant in such variations. What environment furnishes, and all it can furnish, is the stimuli and the survival conditions.

3. *Reflection and the Tertiary Strata of Instincts — the Ideals or Sentiments*

While the environment is, finally, playing the primary and secondary instincts, and under the shelter of the later ideal tendencies or sentiments of the group, the human organism is perfecting its structural machinery for the issuance of a new set of instincts — demands that have to do with the unity and meaning of experience. Given a

certain complexity of our registering slot, and there appears the power of analysis and abstraction. This again is a leap, perhaps the most wonderful leap of all. Consciousness by a new device is able to hold its head above the passing stream and survey the before and after. It no longer merely *is* but *sees* the passing events. From the point of view of race history it means a lucky structural variation or accumulation of variations, which changed the whole course of evolution by giving meaning to the process and thus establishing new survival values. With the individual, however, reasoning, as habit and associative memory, is congenital, appearing when the proper structural series has been passed through in response to the stimuli of the environment, which now first become problems. The idiot cannot *learn* to reason.

Some psychologists have held that reasoning has its beginning in language and that it is in language that man is especially superior to the animals below him. But language in some form can exist without reasoning, as is shown in animal life, and as people's creeds and platforms still testify. Given the structural machinery for abstraction, and language becomes an indispensable instrument and so has developed to answer the demands of reflection. Nor can reason or meaning be reduced to lower forms of consciousness. It is not more of dreamy association, however complex the latter may become. It is a new attitude. However much its genesis may exceed our comprehension, we have now the structural machinery for holding ourselves, *i.e.*, our primary and secondary instincts, at arm's length and looking at ourselves—a mechanism which furnished us with those tools by means of which we can break up our world and select those rela-

tions and objects that have meaning and value for us, instead of dealing with the world as a collection.

With the structural machinery for reason there appear a new group of tendencies, demands for simplicity and consistency, for unity and wholeness, for truth, for right, for happiness, for beauty, for a religious and philosophic setting for our tendencies or needs. From the vantage ground of this new structural differentiation the primary and secondary instincts can be surveyed and evaluated, and a whole constituted. Yet our bias for simplicity and consistency, our sentiments for truth and beauty, are in their deepest roots instinctive, however luminous they have made the pathway of life. The deepest attitudes towards the universe were never invented by man; they are not the result of a consensus of opinion; they are presupposed, on the contrary, in all our reflections upon life. Without them we should not have raised the question of why and wherefore nor have felt the need of a consensus of opinion. Our highest activities, therefore, no less than the most primitive, move within instinct, are the response of our organism to the call of the environment. Before these instinctive demands existed there was no call, for the environment spoke to deaf ears; there was no riddle of the Sphinx, only a vacant stare; no order, but only the passing show of meaningless events.

It has been said as a criticism against Kant that his categories are shot out of a pistol. This is true of reflection generally, as well as its fundamental categories. Reflection, systematic meaning, when it appears, is not more complex associations merely. It is a radically new attitude. It did not grow out of previous non-reflective experience, however complex. Stimuli, intra- and extra-

organic, have been acting upon the organism. These have been the occasion for the organism unfolding its structural series, according to its own inner dynamic unity, until at the beck of the ever active environment there leaps forth reason, abruptly, as Athena leaped from the head of Zeus, and mysteriously, as Aphrodite rose from the sea. The self is awake instead of dreaming. This could not be due simply to the call of the environment, for that has been comparatively stable. Rather the reason for the call being a call must be sought in the new structural conditions perfected for the purpose. Just as sexual love appears at a certain stage of development, when certain structural conditions have been completed, and a totally new response is made to old stimuli, so reason appears suddenly and unsolicited, when the structural series reaches a certain stage. We ought to speak, therefore, of falling into reflection as we speak of falling in love. This I need not say has nothing to do with Flechsig's attempt to establish a distinct anatomical center for higher mental processes. This theory no more stands or falls with his success or failure than does the instinctive character of sexual love with the phrenological bump of amativeness.

What has been said of the more general categories holds equally for the more particular preferences and tastes that go to differentiate one individual from other individuals. Imitation no more on the higher than on the lower levels creates tendencies; but a certain stimulus is the fascinating thing, because a certain structure is set off. The illuminating sanity of James, Royce's esthetic bias for an Hegelian absolute, and Münsterberg's love of dialectic — all are organic: they condition, and are not made by, environmental stimuli. There is a certain sameness indeed

in our categories and preferences, in so far as we are normal, due to survival conditions. This is especially true of our moral tendencies, which would be especially concerned. Beyond the dead level, however, which keeps us out of the penitentiary or the insane asylum, our tendencies or preferences vary vastly. Here natural selection is tolerant of sports, and the more so the more evolution progresses. This helps us to understand the different tastes which become creative of such different types in philosophy and art. It also accounts for the utter lack of finer esthetic or philosophic appreciation in the larger number of men. These are so far aristocratic variations. Of course, in the progress of civilization, tendencies such as the higher esthetic may become more universal as an equipment of the race; and "he that hath no music in himself" may in such a state of society be regarded as "fit for treasons, stratagems and spoils" and dealt with accordingly. A higher moral equipment, at any rate, is gradually demanded.

Yes, if we are poets or artists or philosophers or scientists at all, we are born such, and not only to the class but to that particular type that individualizes our contribution from that of others, though of course owing to a defective environment our tendencies may never be played so as to develop the possible scale of values. Only the other day I was startled by the striking resemblance between a cabman and a great philosopher that I know. Had the environment played the scales with some degree of skill, the cabman might have been a philosopher, and with a different set of stimuli the philosopher might have been a cabman. Again, we find too often those lacking evolutionary qualifications holding down the job; and men without philosophic

insight respond with a feigned adjustment of mere words, as the color-blind man classifies the beautiful world of colors in his own series of dull grays. Sometimes the lack of native equipment is in more elementary tendencies, as in the incapacity shown by some people for the rudiments of number or language; sometimes it seems a lack of the more fundamental moral tendencies, though the clumsy and unnatural order of our stimuli may be responsible rather than the native equipment. Out of the young criminals committed to the Iowa Industrial School at Eldora about eighty per cent turn out honorable men.

If we say that what is native is docility, then at least we shall have to use the plural or docilities, because docility in one direction need not mean docility in another. But what does docility mean? Is it not like imitation, a mere name for a result? Is not man docile in very much the same sense that the slot is when the proper coin is put in and it works? A man may be docile as regards things intellectual and not in things esthetic, to one kind of intellectual things rather than to another, and to one kind at one stage of his development, to another kind at another stage. Docility, then, must find its explanation in the fact that certain tendencies or instincts can be set off by a certain kind of stimulus.

While the machinery of reason was evolved for the sake of the earlier instincts and those that came into being with it, the machinery in some individuals, as a result again of variation, has become detached from the earlier strata and runs with wheels free. This is one of the forms of play, in other words, and the mechanism of reflection thus subserves a double purpose, that of coördinating the more primary tendencies and that of mere play, whether as ab-

stract reflection and system making or perhaps working in the more picturesque material of concrete images, instead of words, in obedience to the sentiment for the beautiful. This play purpose of the reflective machinery may altogether eclipse the primary purpose, but even here the machinery is run by instinctive demands.

We have sketched broadly three stages of mind with their characteristic instincts and their characteristic mechanism for making the instincts effective. First, the stage of physiological or sensitive reaction, where consciousness is a mere spectator. Here appear the egoistic-preservative instincts. The mechanism here is trial with gradual elimination and habit. Secondly, the stage of associative memory, where an image or past result can guide the reaction. Here appear the social instincts. This stage is vastly superior to the preceding in its coördination, in the complexity of its instincts and the economy of effort. Last of all we sketched the stage of reflective meaning with the apparatus for survey, for selection, abstraction and substitution. With this appear the ideal instincts or demands. We have seen too that each earlier stage as a result of natural selection can be telescoped into a later stage of the group by the providential arrangement that all individuals are not of the same age, but that the parents by the virtue of becoming parents have developed a later set of instincts, sheltering the offspring in their earlier stage and furnishing stimuli for the development of the structural series. As the later instincts appear, however, the earlier are telescoped into the later in the same individual and the later become the guides and the sheltering foster-parents of the earlier. Even on the reflective level the instinctive stages retain something of their integrity. We are not always,

indeed very seldom, reasoning. In that case the next lower court presides. But even this may sleep or be disattached from the lower centers, and then the lowest presides. Or, taking a cross section of the reflective stage, while attention selects certain aspects as focal, in the marginal field we shade off into the more primitive stages of consciousness through border-line associations into dim awareness. And so the stages of race history repeat themselves in their general outlines, not only in the stages of individual history, but every day, and, in fact, coexist in one attention moment, the whole distance from tropism to reflective meaning.

The purpose of the mechanism of instinct, whether habit or associative memory or abstraction, is to make instinct more definite. Instincts are at first universal. They are fitted to go off at a certain *kind* of stimuli, on the lowest level a very vague kind indeed, but more limited with each stage. There is a good deal of difference between taste in general and taste for music. Habit is at best a clumsy device for limiting the kind, but memory makes possible reaction upon a particular, while the reflective machinery makes possible descriptive definition.

The whole series of life can thus be expressed in instinctive terms, both as regards content and mechanism — meaning by instinctive reaction a response that is called off as a result of organic structure, given the proper stimulus. We are such mechanisms as to develop in a certain structural order and to respond at certain stages in certain characteristic ways, given a certain range and order of stimuli. The failure to call forth a certain tendency in its dynamic order may fail to call forth other tendencies, as some tendencies are dynamically conditioned upon each

other. Thus the failure to respond to sexual love must mean the failure to call forth the paternal tendencies, and the failure to present the situations of danger and sacrifice must also fail to call forth the heroic tendencies. It is here that we are helped to some extent at least by the ideal situations of poetry and art.

I realize full well how one-sided and mechanical seems such a statement of the evolution of mind. The structural side of the process is but one side, though it lends itself most easily to scientific description. The whole series of evolutionary forms and categories must be understood from the point of view of creative will, which through a variety of efforts, gradual cumulations or sudden mutations, strives to make itself definite and individual and which gives continuity and unity to the process. And while on the lower levels of life we may have to be satisfied with a chemical statement of the seemingly accidental variations, may it not be that we have over-emphasized physical generation as a condition for variations in structure? May not the passion and birth in ideal beauty — intense moments of ideal creation — have their effect upon the germ cells, as they have their creative effect upon the later life of the individual? It may be a provisional bias, due to our experimenting with lower forms of life, that makes us look upon sexual generation as the only condition of plasticity. There seems, at any rate, to be something especially plastic about the life of reason as contrasted with the more primitive life of habit and association. We know little about the conditions that can influence the germ cells — those bearers of the life of the race; but we have come to realize more and more the widespread and subtle physiological changes of which our psychic states, especially under conditions of

high intensity, may be the occasion. May it not be, too, that the universe itself operates as an artist and that the blindness of the process lies only in our ignorance? At any rate, the continuity of the building out of structure must be sought on the side of spontaneous impulse, not as the mere mechanical heaping up of bricks by blind accident.

TENDENCY AND ENVIRONMENT

It is clear now that the nature of the environment and with it the survival value of tendencies varies at each stage of development. In the early stages of evolution, survival is a matter of individual fitness based upon certain primary tendencies and their gradual definition by means of habit. Then the social tendencies emerge and survival value must be writ in tendencies that supplement each other so as to make group life possible. The primary instincts are thus telescoped into the more complex secondary instincts with their mechanism of associative memory. Last come the ideal instincts that appear with the power of analysis and abstraction, and primary and secondary instincts must be telescoped into these tertiary instincts in order to meet the conditions of survival. With each stage of evolution instincts become more numerous and complex, and as the later individuals become part of the survival conditions to be met, the survival conditions become more complex.

It must be kept in mind, too, that, while we classify our ideal instincts under certain large genera, such as feelings for truth, for beauty, for right, for reverence, etc., these are only large rubrics and that within them there may be any number of instinctive variations, conditioning our creativeness and appreciation. Hence our realists and

idealists in art, our tender-minded and tough-minded in philosophy, our rigorists and hedonists in ethics, our Protestants and Catholics in religion — in brief our schools with their types and traditions and their intolerance. While it is true that imitation, conventional and customary, may lead people into those schools, who do not belong there natively, and, therefore, a large degree of uniformity may be obtained, yet it is also true that such types of feeling and thought would not have arisen in the first place and would not continue indefinitely through the ages, if they did not have an instinctive basis in human nature.

With greater complexity goes also greater freedom of development. The transmitting of variations with the progress of civilization is not limited to those immediately involved in survival; and in the greater differentiation of labor possible under an industrial *régime*, survival takes many directions. Thus a greater variety of tastes makes possible a wider range of survival. There is room for the musician and actor and sign-painter, as well as the mechanic. Then, too, the instinct of pity or sympathy shelters the unfit, for the time being at least, thus complicating survival conditions.

Survival conditions never change more rapidly than in a civilized environment. While in one generation an artistic genius starves to death on his art, in another he can dictate his own terms, provided his style of art becomes a fad; while in one generation a man would be deemed insane for printing or making furniture by hand, when factories can turn out as serviceable goods by the millions, in another he can become wealthy and famous besides; while in one generation the stake, the cross and the gibbet cut short the opportunity of the heretic from propagating

his doctrines and the species, in another he gets the praise of men and the fat salaries, while the orthodox man is doing the starving stunt. And so it goes, all because different ages produce or at least stimulate different tendencies — because in one age the backward look, in another age the forward look predominates; because the mood of humanity varies.

It is clear that Spencer's idea of a finite static environment which would permit of absolute adjustment once and for all, and a consequent relapse to the level of the primary instincts, neglects the fundamental nature of the evolutionary process. Environment is not merely the mechanical and stereotyped part of nature, but first of all man, and in man the evolutionary process so far from having stopped is going on with even more rapidity as it becomes more complex. Our environment never was more in the making than now and never furnished as large or rapidly shifting a scale of selective values. If the old men just now are in danger of being shelved, as is often complained, it is not so much because they are old as that they grow stereotyped and cannot keep up with the rapid rearrangements. The young old men, the geniuses of the race, were never more valued.

What the social environment does, then, as embodied in human behavior and in the products of mind, is to furnish ever new stimuli and more complex survival conditions. What the individual must do to respond to the fullest extent is to meet the new demands with the corresponding variations. Fortunately it is not necessary to respond to more than a small number of the physico-social characteristics in order to survive. Only an absolute being could be equipped to respond to the universe, point for point. A

man may reach the highest eminence of social usefulness by the narrowness of his specialty, if for the rest he conform to certain general survival tendencies such as honesty and truthfulness (and I regret to say that does not always seem necessary at present). Thus he may rise to the highest efficiency in the business world without responding to things philosophical, artistic or even religious. A genius is one who is gifted with an unusual variation, either in the direction of that which has no direct survival value but calls off the play tendencies of man, such as art, or in the direction of greater survival advantage, as in the case of the moral prophets or the inventors of tools. Nothing is more obvious than the marked difference in the range as well as quality of response in different individuals. Some brains, as those of the idiot, are remarkably opaque; others, like those of the genius, show a wonderful power of refracting light in brilliant and unusual ways; but each mind reflects the light by virtue of its own constitution as manifest in each stage of the series.

We get as much value and significance out of nature and institutional life as we have corresponding tendencies. To the man who lacks the play of esthetic tendency and who is preoccupied with the primary and secondary instincts "sunset and evening star" are nothing, except perhaps a weather sign. In the words of Coleridge,

> O Lady, we receive but what we give,
> And in our life alone does nature live.

And so with the institutional equipment of the race. Our religious tendencies determine our religion, not the opposite. If we lack the feeling toward the supernatural and the sense of dependence, religion is not for us. If we are lacking again in esthetic appreciation, it is very natural that

we should deem art useless or worse and proceed to make bare the temples, or even destroy them as some would-be reformers did. As the difference in creeds and the dread of hell disappear, religious denominations will separate in their worship on the ground of the real psychic preferences of individuals as regards the emphasis of the ethical, the mystical, the esthetic or the philosophical tendencies —always with the possibility of course that the more primary tendencies of custom and loyalty may keep a man where he does not psychologically belong. Institutions are created by our tendencies, and they are properly selective of us only as they make tendencies go off in us; though if they fail to select, they may eliminate and so produce artificial uniformity.

That is as true of the state and family as of religion. The fundamental virtues which underlie social life, such as honesty, truthfulness and kindness, cannot be produced in people. The exciting of other tendencies, such as fear and gain, may produce counterfeit reactions for those mentioned above, inhibiting the original tendencies. And some people live a respectable life that way, no doubt. But it is a great mistake to suppose that because the child at one stage of its development reacts largely on the basis of the primary instincts and shows no sense of truth, or honesty, or kindness, or beauty, that, therefore, these tendencies are produced at a later period. They are acquired no more than love is acquired as the nervous system matures, though an awkward *régime* of stimuli may indeed fail to set them off. Our bias for landscape painting instead of character sketches; Ingersoll's fondness for the babble of the brook and fear of Niagara; our preference for the cathedral to the Quaker meeting house, in so far as preference is active;

our enjoyment of lyric sweetness rather than the searching of tragedy, — all these preferences are conditions or presuppositions of our experience; and while they may be violated or forced by the environment, cannot be produced by it.

Thus dies the old controversy of empiricism *vs.* innate ideas. But not without each side having contributed its immortal say. It was a beautiful figure of Plato — that of recollection from a previous existence. In the process of experience, especially that of dialectic cross-examination, the soul becomes conscious of its past, of the results of previous existences. Especially are our ideals, which we bring to bear upon experience, the echoes of this long history. The fundamental truth remains, though we have changed our terminology and substituted race history for the dim preëxistence of the individual soul and biological tendency for dormant Ideas — not because we are wiser, but because it is more convenient. All other theories of innate ideas are but the reverberations of Plato. And with them all we must agree that, unless the individual brought a constitution to experience, it would be but a squashy, unorganized affair. With the empiricists, on the other hand, we must own that the content of experience, the definiteness and meaning of instinct, can only come as the individual strives to meet the specific situations of the environment. There are no innate *ideas*. It is the *form* of experience which is predetermined. The genetic story of this connective tissue we shall try to tell in the next chapter.[1]

[1] I take pleasure in acknowledging my indebtedness to other workers in this field, especially Principal C. Lloyd Morgan and Professor James Mark Baldwin, who by their splendid works have directed me into this field of thought.

CHAPTER III

The Categories of Intelligence

In examining the categories of intelligence, we shall adopt the genetic method. We shall try to ascertain what the presuppositions of experience are at each stage of development. In this attempt, Kant must be recognized as our great precursor.[1] Indeed, the "Critique of Pure Reason" is a great work, viewed as genetic psychology. We cannot, however, any longer use the term reason to include the whole range of intellectual development. We shall therefore substitute the term intelligence, which means capacity to learn from experience. We must also, in order to get Kant's real working categories, ignore the curiously tacked-on tables of formal logic, and take his working categories as they appear in the body of the Critique. Finally, while in any such effort as this we must own our indebtedness to Kant, we must not forget to recognize the splendid work done by recent genetic psychology.

In order to discuss the categories of intelligence, we must recognize the various levels of intellectual development. And while our nomenclature must be different, and our treatment still more different, these levels coincide, as a matter of fact, with those of Kant's great work.

We must also recognize at the outset the conative character of intelligence, so admirably brought out by Professor

[1] That Kant was a thorough evolutionist, not only in his theory of the stellar world, but also as regards the development of life and thought, has been shown by Dr. Paul Carus in his volume, "Kant and Spencer."

Stout. Life is fundamentally impulsive. It consists of certain tendencies, which strive for fulfillment. It is the nature of impulse to persist with varied effort, until the tendency is realized. The complexity of impulse, and the efficiency of the adaptation to the varying conditions which it must meet, grow very much greater with the increase in the complexity of intelligence. But throughout this development, the same fundamental impulsive character persists. And intelligence remains an instrument, however elaborate, for fulfilling the demands of the will, its need for work and for play.

1. *The Perceptual Level of Intelligence*

On the perceptual level of intelligence even, we must recognize certain biological presuppositions as fundamental. First of all, Kant is right that we presuppose certain space coördinations, which are not derived from external experience. This does not mean that we can take for granted the postulates of Euclidean geometry. But it seems clear now that we do not learn our space reactions by making a map, visual or tactual, before making the reactions. On the contrary, we inherit certain tendencies to reaction which are brought into play by the stimuli of the organism; and by continuous trials and the elimination of unsuccessful movements, these reactions become definite. The child responds to the rhythms of music with certain rhythmic movements of its own not because it has previously learned those movements; but because it is biologically so constituted that it cannot help responding, any more than a kitten can help running after the moving string. To show how largely the coördinations are biological, I will quote from

C. Lloyd Morgan:[1] "I took a young pheasant, which had been hatched sometime in the night, from the incubator drawer at nine o'clock in the morning. He was very unsteady on his legs, so I held him in my hands and tried to induce him to peck at a piece of egg yolk, held in a pair of forceps. He did not do so, but he followed, with his head, every movement of the object in a narrow circle about two inches in front of his beak. Simple as the action seems, it shows a striking example of congenital, coördinated movements accurately related to movement in the visual field, the whole performed without any possibility of learning or practice and in less than half an hour after the bird had first seen the light."

In human development, these spatial coördinations are of course very imperfect at birth, but even so it is true that the responses are the results of the growth series of the organism which is made definite in the try-out in connection with the actual situations. Even the presuppositions which lie at the basis of geometry may be said to be implied in this biological constitution of perceptual experience. The straight line is not a generalization from cases of experience, but is a presupposition which the organism brings with it to its consciously constructed efforts and which must therefore be part of the organic tendencies of the individual, rather than be credited to the learning process.

If it is true that we bring a certain organization to experience, even on the lowest level, as regards space coordination, it is likewise true that we must bring an original adjustment as regards the sense of time. We do not learn the sense of duration, any more than we learn the fundamental space adjustments. The question may well be

[1] Stout, "Manual of Psychology," p. 253.

raised, whether we can have a sense of time before we have memory. It is probably true that we cannot have a definite consciousness of before and after, before we have the passing series of ideas.

But the conditions for a consciousness of duration certainly exist before we have memory. Of this we have some intimation in our own experience. We may have a cumulative sense of meaning without reference to ideas, as in the consciousness of the continuity of a melody. Unless the earlier tone sensations actually persisted in consciousness, we could not have the cumulative realization of a melody, of a tonal whole. In pathological cases we can find numerous illustrations of a consciousness of time, without ideas being present. In my own awakening from a lightning stroke, I had a consciousness of the time elapsed during the vague perceptual state as soon as I began to realize the situation, even though I had had no ideas in the meantime. In awakening from seemingly dreamless sleep, we have a consciousness of an interval having elapsed, and with some training the organism seems to be able to keep accurate account of time, without reference to intervening ideational experience.

Not only do we have a basis for the consciousness of duration, but we have also a provision for the measure of duration on the perceptual level. Some of our impulses are of a rhythmic character. Such is, for example, the impulse for food. We can see, therefore, how such impulses can divide the life of perception into certain fairly definite longer periods, not to mention the shorter periods marked by the organic rhythms against the perceptual background. So that we have present, not only a sense of duration, but certain time wholes, such as we can best realize perhaps

by comparison with our esthetic time wholes in the case of music.

While we recognize the sense of time as a fundamental category of experience, we must not, of course, suppose that our modern chronological measurements, any more than our Euclidean Geometry, is part of the original equipment of the organism. What the organism possesses is a certain time orientation, as it possesses a certain space orientation, which is made definite in the course of experience.

We have recognized so far two categories on the perceptual level. We must add a third, namely, habit. The organism is so constituted that even on the perceptual level it can profit by experience. Learning by habit is a very much slower process than learning by means of ideas. But it is also a much surer process. We are familiar with the importance of habit in our own experience. In order to acquire any delicate adjustments on the part of the organism, we must try over and over again, the futile efforts being passed over, the more successful efforts being emphasized by attention, until finally the accurate movements become part of our nervous equipment. This can be illustrated in any game of skill, as in playing tennis. The lower animals, even the unicellular organisms, we now know, are capable of profiting by repetition, in fixing certain useful adaptations in the way of conduct. The curve of habit is a gradual one, fewer unsuccessful efforts appearing in the course of repetition, but with no sharp break in the process such as we find when the action is pictured in a memory idea. When a horse wants to stop at a place where he has stopped once before or returns by the same road he has only once gone, that is associative memory and not habit.

Another category which we must recognize on the perceptual level is that of imitation, or the tendency of the organism to repeat the conduct of its environment. The importance of this tendency in the learning process of the lower animals cannot be overemphasized. A large amount of the adjustment, which in the past has been credited to instinct, must now be credited to tradition and imitation. In this way, a young animal learns to profit by the hard-earned experience of its predecessors and thus to make its indefinite instincts more adapted to the specific demands of the environment. In a similarly imitative manner the child comes to master the mechanism of language, and thus to prepare itself for the functions of the higher stages of mental development. A child does not have an idea of language first, or a picture of the movements which it is going to make; given such stimuli, it cannot help responding, or attempting to respond, in such a way.

2. *The Level of Reproductive Imagination*

On the level of reproductive imagination we recognize a still greater economy in the way of procedure. We have seen that habit is at best a slow and stereotyped process of adjustment. A memory image which furnishes at one stroke a picture of the concrete situation and its adjustment is a short cut compared to habit. The image may be compared, as Bergson says, to the cinematograph copy. It records, in a simultaneous picture, the successive acts of attention which were involved in the original adjustment, leaving out such details as were irrelevant to attention and being therefore more sketchy than the perceptual situation.

The moving pictures of the reproductive imagination presuppose certain tendencies or laws which are part of our mental constitution and are not learned by experience. They may therefore, in Kantian phrase, be termed *a priori*. We must recognize three categories of reproductive imagination; namely, contiguity, similarity and set.

When we attend to various items of experience as part of one space and time setting, they come to form one context or part of one disposition, in such a manner that afterwards, when one item is brought into play, it will tend to reinstate the other items also. What particular item shall be brought up at any one time, other things being the same, will, of course, depend upon the strength of the habit, which, in turn, is conditioned by the number of repetitions, or by the vividness of any one excitement, or by the recency of the occurrence. The events of our mental life, inasmuch as they must run through attention, will be found to be strung upon this law of contiguity of interest.

The law of contiguity, however, is not the only method by means of which the facts are strung in our mental life. There is also a tendency to pass from one fact to another and to string them together in new ways by reason of similars, whether the similarity be one of quality, or relation, or an identical word. Take a case of blue sky suggesting the blue sea. We are taking for granted here that the two have not been experienced together, for then it would only be a case of contiguity. When blue sky, however, suggests blue sea without their being part of a previous context of interest, we have a new pivot for recall. What happens in this case? Not habit, because there has been no habit as between these processes. The attention to the identity of the blue quality becomes a new linkage.

A new connection has thus arisen as a result of consciousness, which affords a bond not made before. This consciousness of a part belonging to two contexts by virtue of the identity of some elements within them is entirely different from the contiguity relation. There is no contiguity until after attention has made the identification, after the connection has once been made; that is, after the fact.

In order to understand either the operation by contiguity or by similarity, it is necessary to add another category, that of set. As a matter of fact neither contiguity nor similarity operates mechanically. They are steered in either case by the dominant interest or total impulse at the time. The mind operates somewhat like the switch system of a railway. When one switch is open, as the result of interest, the other switches will tend, more or less, to be closed, though in the case of some minds it seems to be a case of continual running off into the other directions, and running back again. The total train of association, however, is dominated by this selective disposition of which I have spoken as set. Take it in the case of contiguity: while many facts have been attended to together, and even though the mechanical habit should be as favorable in one direction as in the other, the tendency will be to run the train of associations in accordance with the interest or affective tone at the time.

In recall by similars, the category of set becomes still more obvious. The old contiguities are traversed in all sorts of new ways, because of the dominant disposition at the time. The set may be a practical end to be accomplished, a certain emotional tone at the time or a fascinating image which for the time being holds the field. But in any case the mind does not act merely from part to

part, but the preceding events and the present context of association and emotion must be taken into account in understanding the course of ideas. In reproductive imagination this interest is impulsive and emotional, is not organized, and soon spends itself, and gives place to another impulse or emotion. Hence the constellations of ideas which hang together by means of these individual impulses form largely independent clusters, except as shot through now and then by the consciousness of similars. It is not until the reflective level, however, that we have an indefinitely sustained set or organized interest.

3. *The Level of Empirical Generalization*

If the memory image is an economic device in the adjustment of the organism, a still greater economy is effected when we come to the level of thought. By means of reasoning we can free ourselves from the slavery to the concrete situation, by substituting for the total situation certain characters or relations which are significant for the type of adjustment in question. Thus we can, not merely repeat adjustments once gone through as in the case of memory, but meet new situations on the basis of the characteristic identities which we have abstracted from experience. On this level of generalization, we must take account of four different categories or forms of synthesis. There is the synthesis of quantity, the synthesis of quality, the synthesis of cause and effect and the synthesis of individual interpenetration or substance.

Let us speak first of the synthesis of quantity. Experience is such that we can recognize the characteristic of more or less in comparing its processes. On the basis of this distinction we can apply our conventional units to our

space, time and energetic relations, and spread our facts out into series. It is unnecessary to say that the category of quantity has nothing to do with the classification of propositions in formal logic, though the identity of the word in the two cases seems to have confused Kant.[1] Nor can we agree with Kant that quantity, as we take it in experience, is an aggregate of previously given parts.[2] We do not synthesize an infinite number of positions in the drawing of the line. As a matter of fact we would have to synthesize infinities of an infinite number of *Mächtigkeiten.* And then we would miss the real character which makes quantity continuous. Infinite divisibility is a purely conceptual and hypothetical affair. We do not make any such synthesis psychologically.

Once having arrived at a unit of measure we have a great advantage in the description of the world of processes. We can take facts over again and compare them; we can make our own conduct definite with reference to them on the basis of this quantitative spreading out of facts of experience. With such accuracy of description we have the advent of science. And all the facts of experience lend themselves to this quantitative way of taking them. They are capable of being taken as more or less, if not extensively, at least intensively.

Besides spreading the facts out into quantitative series, we can spread them out on the basis of their degree of difference as regards their qualities. Thus we spread out our color series, our tonal series, our number series, etc. The number series, which must be taken fundamentally as

[1] Compare p. 58 and p. 66, "Critique of Pure Reason," Max Müller's translation.

[2] *Ibid.*, p. 133.

an order series, is the most important of all, as it furnishes the hierarchy of values which we must presuppose in all of our measurements. It is not true that quantitative comparison is more fundamental than qualitative. Difference in qualities is just as important in the adjustment of the organism as the consciousness of more or less. And spreading tones out into series of octaves and colors into their respective color dimensions cannot be reduced to quantitative comparison, whether intensive or extensive. Nor can we make quantity a mere result of quality. Facts can be taken as more or less in experience, as differing in extensity or at least in intensity, independently of variation of quality. We cannot, finally, regard qualities as varying in infinitesimal degrees to zero, as Kant supposes.[1] Such variation is a purely conceptual affair. Perceptual qualities have a finite threshold and vary by finite increments, whether intensively or in kind.

Another method of synthesis is that of causality. It was Hume that showed that when facts follow each other according to invariable antecedents and consequents, we come to regard them as causally connected; in fact, cause and effect merely mean that facts are definitely predictable under certain conditions. There is nothing hidden or mysterious about causality. The constraint, however, cannot lie merely in subjective habit or even in a category of causality. The constraint must lie finally in the processes of which we take account. The necessity which we feel in regard to certain sequences is in part due to mental constitution, to be sure, but on the one hand, it could only be evoked by the conditions of antecedents and consequents on the part of the content; on the other, the necessity of

[1] *Op. cit.*, p. 138.

the content relation must prove itself independent of the subjective feeling. The latter has often attached itself to the wrong content and must be corrected in the course of experience. The method of agreement, therefore, must be supplemented by the method of difference in some form. Kant himself recognized that the particular causal series must be ascertained from experience and cannot be read off *a priori*.

We cannot recognize reciprocity as a distinct category, on the same level as causality, as Kant does. Reciprocity is merely causality read both ways. It is double causality. The best illustration is that of gravity, where one mass does not merely pull the other, but each body responds to gravitational influence according to the mass and inversely as the square of the distance. The same would be true of any other causal relation. Each factor in the causal relation contributes to the result. Reciprocity is merely testimony to the fact that the universe has a plural character — consists of many centers of energy. If such were not the case, there would be no causality at all. Causality in a monistic world has no significance.

Finally, a fourth method of synthesis is that of individual interpenetration. In the case of causality, the characteristics appear in a sequence, according to the successive conditions which set them off. In the category of substance or individuality, the characteristics must be conceived as coexisting and interpenetrating. They exist in the service of one impulse or end. Whether different characters *can* so interpenetrate we cannot here argue. We must merely insist that if they *do* so coexist, if they must be taken in such a manner in the procedure of experience, then they *can* coexist and interpenetrate.

Individual synthesis takes two forms in the procedure of experience. We distinguish between individual *things* and individual *selves*. Individual things are such as they must be taken in their external relations. They have no inwardness of meaning and value. Individual selves must be recognized as having a meaning of their own. But the method of synthesis is the same in either case. In either case we have the interpenetration of qualities. In either case the diversity of characters is unified by its being taken as expressing one impulse or fulfilling one purpose.

4. *The Level of Idealization*

In the first place, it may be well to define what we understand by ideal synthesis. We can do no better than to state the admirable definition of Baldwin: "Ideals are the forms which we feel our conceptions would take if we were able to realize in them a satisfying degree of unity, harmony, significance and universality." [1] Four characters are involved in ideal synthesis. First we demand a unity of parts within a whole. This means that the various facts must be capable of being understood as expressing one idea. In the second place, there must be harmony; that is, the parts within the whole must be seen to support or reënforce each other. Thirdly, there must be clearness and distinctness or simplicity of relationships. That is, we must be able to pass with ease or fluency from one point to another. And fourthly, the ideal synthesis must be capable of social sharing or universality. We cannot here follow these requirements for each field of ideal synthesis, such as the esthetic, ethical, etc. Each field is limited

[1] Baldwin, "Feeling and Will," p. 202.

by its own content and its peculiar constitution, whether it be the satisfaction of the requirements of the intellect, or the requirements of feeling in its specific forms of realization, or the requirements of the will in its moral endeavor, or the requirements which our total nature sets for the unification and conservation of values. But here our concern is with the ideal of intelligence alone. Can the universe of facts with which intelligence deals be said to possess these characteristics, so far as knowledge is concerned? We cannot say as yet. For us, as finites, a complete knowledge is an ideal. In the meantime, we must live by faith. But if we did possess such a knowledge, the ideal would require that it possess unity of principle, that is, the facts would be seen to follow according to a certain identity which could be described. There must further be harmony, or mutual support of parts. Facts would lean on ideas, and ideas on facts, without break in the adjustment or the transitions. The relations would further be seen to be clear and distinct; that is, every fact would be definable by means of a few finite principles. And such a synthesis would finally be universal; that is, it would everywhere compel the social agreement of all rational beings. While such an ideal synthesis lies beyond our experience, we cannot say it is impossible. On the contrary, we must have explicit faith in its realization. It is the passion for such unity which furnishes the real motive of all of our scientific endeavor. In the meantime we can work for it and approximate to it. With Kant we would agree, "These ideals, though they cannot claim objective reality (existence), are not therefore to be considered as mere chimeras, but supply reason with an indispensable standard, because it requires the concept of that which is

perfect of its kind, in order to estimate and measure by it the degrees and the number of the defects in the imperfect. . . . This is the case with the ideal of reason, which must always rest on definite concepts, and serve as a rule and model whether for imitation or criticism."[1]

What the ideal of reason or the philosophic consciousness adds to our scientific work of generalization is a feeling for wholeness within the fragmentary generalizations of our experience. This is more or less implicitly present in all our sorting of experience, even if not brought into definite consciousness. It always sets the implied goal of our endeavor. Now this feeling for wholeness takes a fourfold form as expressed in terms of the content of our experience. It becomes the demand for the unity of our inner experience or the ego; the demand for the unity of our outer experience or nature; the demand for the unity of our social experience, our fellow world, or history; and finally, the demand for unity in the totality of being or the absolute.

In the case of these ideal wholes, we must recognize with Kant that they have no relevance except as applied to reality as experienced. They are tendencies or demands on the part of our mental constitution, in dealing with its objects. Kant is right, too, as regards the human character of this conceptual construction. We cannot say that there are not beings in the universe differently organized from ourselves, for which such ideals would have no relevance. In fact, we are pretty certain that such ideals are not present in animals limited to the planes of perception and reproductive imagination. Whether, however, as Kant suggests, there are beings superior to ourselves, that have

[1] Max Müller's translation of the "Critique of Pure Reason," p. 461.

a higher mode of intuition, lying outside our methods of synthesis, it is idle to inquire. We, at any rate, must deal with truth as the goal of the realization of such capacities as we have as human. We must part company with Kant when he assumes that reality by being experienced is thereby "faked," subjectively encrusted, in such a way that we are prevented from knowing things as they are. We must, on the contrary, believe that reality is more of the same kind of thing which we are grasping in a fragmentary way in our actual human experience. A thing in itself outside of experience can solve no problems and can be of no possible interest to us. It is not merely problematic, but it is due to a false abstraction — the supposition that things can exist by themselves without making differences to other individuals. We must hold that it is precisely through the differences that individuals make in definite contexts that they can be known. And they are precisely such as we must take them, in such contexts.

Once we frankly and thoroughly apply the pragmatic method to the taking of experience, we can avoid the pitfalls into which Kant fell on account of his false distinction between reality as experienced and things in themselves. Take, in the first place, the ideal synthesis of inner experience, or the ego. We must hold here that "the soul is substance,"[1] in so far as we can recognize constancy in the series of its processes, and predict its conduct. This is the only practical significance of substance. We must hold, secondly, that the soul is "as regards its quality simple" in so far as we can take it as such, that is, in so far as one idea or purpose can be seen to run through it. This does not prevent its owning a complexity of processes;

[1] Compare *op. cit.*, p. 281, "Paralogisms of Pure Reason."

and both in ordinary life and in pathological cases we know that the self may be far from being systematically unified. In ordinary life, the self may hang together merely by contiguity of interest; and in pathological cases, even this external thread may be broken. As regards the numerical identity of the soul at different times, this again can only have pragmatic meaning, that is, as a series of processes realizing a unique will throughout the shifting fringes, and thus distinguishable from other self histories. If we look for an identical block of being, certainly there is nothing in our experience to warrant assuming any such numerical identity. The soul is numerically distinct, because it can be distinguished from other souls with their streams of processes. Lastly we can agree with Kant that the soul "is in relation to possible objects of space." With Kant we would adopt empirical realism. In his own words, "all external perception proves immediately something real in space or rather is that real itself,"[1] though without Kant's implication of the shadow of a thing in itself in the background.

In our finite experience, we must hold that the unity of the self is a goal to be accomplished, rather than a finished fact. We must substitute for the block unity of a static conception of the soul the dynamic unity of a conative direction or purpose to be realized, which makes the parts hang together by virtue of this realization. This conception of unity differs from that of pure associationism, which regards the self as a mere collection of static ideas without any internal cement which binds those bits together. On the other hand, this view differs from the old soul theory, which evidently Kant had in mind, of

[1] *Op. cit.*, pp. 304 ff.

a simple, identical, static entity which must be added to the successive processes of consciousness. Such an entity, it is easy to see, is pragmatically useless. The only unity which can be of pragmatic value must be the dynamic coherency and direction of the successive states within an idea or purpose. Thus we dodge the formidable so-called "paralogisms" of pure reason, which are only Kantian scarecrows.

If, again, we take up the ideal synthesis of outer experience or nature, we find the pragmatic method equally clarifying. Here, too, we must be satisfied to take reality piecemeal and for what it is in experience. And thus we shall steer clear of the Kantian antinomies.[1] Nature can be taken as a series of conditions just in so far as it is convenient so to take it. We are always concerned with special problems in dealing with our world. Our interest in nature has to do with the prediction and control of certain practical situations, not with nature in the abstract; and we must trace these conditions just in so far as the needs of prediction require. Absolute completeness of conditions is a matter of theoretical abstraction. Space and time, as quantitative series, are merely our ideal tools for dealing with the world of experience, as Kant has truly shown. Following them out to infinity will be at best a tiresome play, on the part of the faculty of ideal construction, and could have nothing to do with reality. Whether reality is infinite in time and space cannot be settled *a priori*, but must be determined with reference to the needs of actual experience. And here the extent of reality, in either space or time, is only of interest in so far as it helps us to describe and orient ourselves within the world with which we must deal.

[1] Compare *op. cit.*, p. 344.

Since we cannot conceive change to have originated from the unchanging, we can theoretically extend our ideal construction of time indefinitely back. The extent of space has interest for us only in determining the relations of energies in space. And these relations may be finite, whether space itself is infinite or not.

When we come to the question of the divisibility of the objects of our outer experience, here again we must proceed pragmatically. Our mathematical quantities are indeed infinitely divisible by definition. Not so the empirical world. This is only as divisible as we can take it for the purposes of conduct. Whatever may be decided as to the existence of atoms and electrons, there certainly is no evidence of infinite divisibility.

If we take, again, the question of origination, or causality *versus* freedom, the pragmatic way of taking reality recognizes, on the one hand, that there are certain constancies or identities in our world of experience, otherwise we could not take our objects twice; we could not have the same meaning over again. We could have no prediction, and therefore no science. On the other hand, there seems to be a certain amount of novelty; of new accretion to reality, at least in certain spots. So it seems to our finite experience, at any rate. What we must modestly do in dealing with facts, is, to render unto Caesar that which is Caesar's, and take reality as we find it.

This is equally true as regards the problem of necessity and contingency. There can be, so far as we can see, no isolated, indifferent facts. The various centers or energies must hang together within certain contexts. The only context which is theoretically self-existing and self-explanatory is the total dynamic whole of reality. This does not mean,

however, that either the whole or the parts are absolutely fixed or ready made; that reality in the making might not have been otherwise. We are dealing here with ideals which we must try on so far as they will work. Thus the Kantian antinomies as regards our attempted synthesis of nature disappear with the pragmatic or instrumental view of truth, on the one hand, and the banishing of the fictitious things in themselves on the other.

Taking up, in the third place, the demand for an ideal unity of our social experience or history, here too we must be satisfied with this same pragmatic method of procedure. Empirically viewed, there seems to be no such thing as history. There are rather various histories, individual and national, which sometimes overlap and sometimes fail to do so. If there is to be an ideal whole of history, therefore, we cannot look for it in the past, with its many more or less separate streams of civilization; but we must look for it in the future. Such unity of common sympathy and common understanding seems to be more, at any rate, than a dream. So far as human life on earth is concerned, it is being swept more and more into the whirlpool of international agitation, commerce and education. And it seems likely, therefore, that in the try-out of various ideals, now competing for supremacy, certain common standards of conduct will result.

The unity of history, like the unity of the individual self, means the convergence towards a common ideal. It means the thread of an identical will or purpose, running through the many individual and national histories with their motley events. Such unity may provisionally be communicated to the larger masses of individuals and nations, by the imitation of a great personality, which thus

comes to set his stamp upon events. In the long run, however, ideals, whether personal or impersonal, must be measured by their capacity to unify and satisfy the complex demands of human wills. Thus we can understand the historic life, when we can follow the transitions of experience through the identical ideals or purposes on which the events converge.

We have discussed so far three forms, which our ideal feeling for wholeness takes in its realization in experience, namely, the realization of a whole of our inner life, or the unitary self; the realization of a whole of our outer world, or the systematic unity of nature; and the realization of a whole in our fellow world, or the systematic unity of history. We must still take another step. Our mental constitution is such that we could not rest content with these forms of ideal unity, standing side by side. We demand a still more comprehensive form; namely, the complete synthesis of all experience, or the absolute. With Kant, I would insist that such a unity is an ideal of our reason, a regulative principle in the unification of our experience. It is a faith that, somehow, the universe as a whole hangs together; that we can pass directly, or by means of intermediaries, from one part of our world to another without break. As such an ideal, or law of totality, the concept of the absolute has a legitimate function in experience. In other words, the ideal of knowledge is that of a fully organized, systematic unity of all facts of experience.

We have no right, however, to hypostatize such a unity of experience into an objective existence. Kant has done immortal service in showing that no *a priori* proof of the existence of such a unity of experience, including and con-

stituting reality as a whole, is possible. The traditional proofs of such an absolutely necessary experience are inconclusive, if not question begging. We can of course have the idea of such a being. There is nothing inconsistent in the concept of the absolute. We can therefore think of it as having existence, but no thinking of ours can constitute such an existence. This must be proven, if at all, by our success in using the hypothesis in meeting the actual needs of experience. It cannot be proven *a priori.*

Finally, the concept of God, and the proof for the existence of God, need have nothing to do with such an assumption in regard to the totality of being. In any case, there is no reason why we should worship existence as a whole. Our faith in the moral law, and in its being a valid expression of our universe, may lead us, as it led Kant, to the recognition of a personal finite consciousness who embodies in an effective way our moral demands. But this has nothing to do with the conception of the totality of being.

Our feeling for beauty, our striving for order and unity must indicate that the universe cannot at any rate be foreign or hostile to such demands, for we are part of the universe; and our ideal demands are the last word of its long, groping and struggling evolutionary history.

PART II

THE NATURE OF TRUTH

CHAPTER IV

The Truth Process

In discussing the thought process, I wish first of all to differentiate thought from other types of meaning; in the second place, I want to show the relation of thought to language; in the third place, I want to make some comments on the psychological investigations of thought; and in the fourth place, I shall try to define the thought attitude itself.

I

In the first place, in discussing the thought process, we must be careful to differentiate thought from the simpler, prelogical stages in the development of meaning, as well as from other types of organized meaning. Not all consciousness of the meaning types can be identified with judgment, if by judgment we mean being awake or actively controlling the stream of consciousness. Already on the perceptual level we have cumulating meaning. The series of impressions is unified by the impulsive interest. They overlap as warm, living sensations, as the tones of the melody, and are cemented into a complex affective disposition. If that is true on the perceptual level, it is still more obvious on the level of associative memory. Here the idea gets its significant coloring from the suggested context of contiguity or similarity. Yet so long as the control of the train of images is impulsive merely, we cannot call

the suggestiveness of context a case of judgment. We must recognize contexts, perceptual and ideational, built by prelogical interest and ready made when we wake up to think.

Not only does *unification* into persistent content-clusters, in the way of sensory complication and association of images, take place on the impulsive level of development. *Discrimination*, too, begins on the prelogical level. It may be voluntary. Take Martineau's familiar illustration of the billiard balls. The child's attention singles out the moving billiard ball from its context. When a ball of another color is exchanged for the former, attention may detach the quality of color; and so with the form and other properties. Having had experience with a bitter-tasting fluid in a bottle, the child turns its head away from the medicine. In the confusion of odors, the faithful dog singles out the trail of the master. But these discriminations are quite involuntary and cannot, in any true sense, be termed judgments. When the judging process proper begins, it already possesses, as a result of involuntary discrimination and abstraction, a wealth not only of concrete objects, but also of abstract qualities and relations. This must be kept in mind when we come to define the nature of the judging process. Not all abstractions are concepts; and acting upon an abstraction does not necessarily imply a judgment. The dog identifies the tramp type, the duck identifies the watery kind of thing, but not by judgment.

Another caution, which must be remembered, is that the child receives the benefit of a great deal of thinking, on the part of society, which has passed into convention and custom. We are born into a world of certain thought-fashions, as into fashions of clothes and manners. We

imitate the conventional attitudes about us as regards science, and politics, and other important adjustments to contemporary life. We also imitate the customs, which have been handed down to us from time immemorial, and which, unlike our laws and science, do not appear to be man-made, though they are themselves the survivals of forgotten inventions. Whether our imitation is due to contemporary prestige, or to the prestige conferred by time and ancestral association, in either case we must not mistake such adjustments for thinking, however much thinking may have been involved originally in formulating those social axioms which we are now taking for granted. The result of such imitation is that society has the appearance of doing a great deal more thinking than it does. We speak glibly about evolution, and gravitation, and other fundamental doctrines, without knowing as a rule the reasons upon which they are based. We take them because they are the thing. They are part of our social atmosphere. As a matter of fact, we do but little thinking, and that usually about only a small part of experience. The rest we take on authority and prestige.

Even the adaptation of means to ends need not involve thought. It may be due to instinct or ordinary association. We ought in justice to apply the same criterion to human conduct as we do to that of animals in general. If we do, however, it is likely to play havoc with our cut-and-dried logical schemes. We will find that with us, as with the animals below us, the greater part of the conduct, which has the appearance of being intelligent, is due to habit and the imitation of tradition. In the case of human conduct, as in the case of animals, the criterion of thinking must be the ability to adapt one's self to a novel situation on the basis

of identical characters, which we select from the concrete complex and substitute for it. Thinking is a form of volitional conduct, which asks the why and whither; which implies reasons or relations to a context; and which terminates expressly or impliedly in a definition. This is such a situation as can be met on the basis of such an identical character as ascertained through previous experience. Thinking always means an active singling out of a relevant character — a quality or relation. It is the conscious, active control of a situation on the basis of a selected content, whether that situation be associative or perceptual, inner or outer, and however much it may differ in other respects from the original situation.

We have tried to differentiate thought from the more primitive stages of cumulative meaning, such as learning by habit and association. Thought, while utilizing the perceptual and associative stages of meaning, puts a new stamp upon them. It differs from these by involving organized control of the perceptual and associative stream of processes; by the deliberate singling out of a relevant character from the concrete situation and the conscious substituting of this for the whole. It thus enables us to meet new situations on the basis of identical characteristics, where habit and memory are limited to concrete repetition. The Indian of the story, once having had the taste of roast pig from the burning of his wigwam, proceeds to burn the wigwam every time he wants roast pig, while reason would enable him to abstract the essential relation and proceed on the basis of it.

While thought thus enables us to economize greatly the life of habit and memory, it must not be forgotten that in turn thought presupposes these more concrete forms of

unity in order to do its work. Complication and association furnish thought, on the one hand, the storehouse from which it can draw in its search for relevant characteristics. The peculiar set of thought can only suggest the appropriate characteristics, when these are already strung by contiguities and similarities within the network of experience. The thought interest *selects* rather than *makes* the significant relations. It runs through and intersects the previous concrete unities in all sorts of ways, guided by its dominant tendency. On the other hand, thought could not arrive at its end, identify its proper objects, unless the *concrete* unities were suggested on the basis of thought's abstractions. It is the merit of these abstractions that they lead us to the concrete situations which we must meet. And this concrete context must be supplied by perceptual complication and memory. To fail to see this relation of thought to the more primitive unities is to fail to understand thought's proper function in experience, which is to terminate in the concrete situation. The value of our theory of eclipses is to enable us to meet concrete eclipses. The value of the search for the forgotten name is to identify a concrete individual.

While we must differentiate thought from the simpler unities of experience, we must also distinguish it from other forms of ideal synthesis, which, like thought, involve ideal construction and organization by purpose, such as esthetic wholes. It has sometimes been argued that the esthetic unity, with its fluent and harmonious synthesis of parts, is the goal of the thought process. Whether esthetic unity is a higher form of unity than thought unity is not a point for discussion here. In any case, we must hold that it is different. We have seen that thought involves the conscious-

ness of active analysis or control of the situation. The previous adjustment is somehow upset, and we must meet the situation in a new way. This means unrest until the problem is solved, until the curiosity is satisfied. While there is suggestion of unity in obedience to a purpose, this is only gotten by hesitation and the pondering of alternatives. The esthetic consciousness is fundamentally different. Esthetic unity is spontaneously suggested to the spectator. It holds us instead of our holding it. In the immediate suggestion of ideal fluency and fitness, it is at the other extreme from thought. If the esthetic object puzzles the spectator, if it requires analysis in order to be understood, if it suggests improvement or readjustment, it has largely nullified its claim to esthetic value. It must be capable of immediate appreciation, without previous understanding. In its harmonious play of parts, in the ease of transition from content to content, in the involuntary, clear and distinct suggestion of the idea or universal, lie its spontaneous enjoyment and its title to being art. Mere technic, mere elaborate and puzzling detail, must be evaluated from some other point of view than that of art.

II

Perhaps the greatest source of confusion in regard to the thought process is due to language. It is true that language is by far the most important tool in the service of thought, and that thought could progress but to a rudimentary extent, if it were not for language. Language is to thought a sort of sixth sense. By its artificial symbols and its network of relations, by "winged words," it enables thought to intuit immediately its own past mind and the

expressed mind of others. But it is not true, either from the point of view of race history or of individual history, that language and thought necessarily go together. In the first place, we are now agreed that there can be thought without language. Other forms of symbolism, perceptual or ideal, may serve the instrumental needs of thought. We do not always formulate our thinking into words. If we look at the development of language again, either from the point of view of the evolution of the race or of the individual, we must recognize that language runs parallel to the whole story of mental development and is by no means limited to the level of thought development. Phylogenetically, language begins on the perceptual level, both as regards emotional and descriptive signs. Animals, which certainly show no signs of thought and may not even indicate the presence of images, still make themselves known to each other, and elicit certain types of conduct by means of certain sounds and gestures. On the level of associative memory, greater complexity of such signs would naturally manifest itself. But it is with analysis and abstraction, or on the level of thought and its inventiveness, that artificial language is first formed with its immense variety of symbolism. Where such inventiveness enters in, you do, of course, satisfy the criterion of thought. The greater number of human beings, however, get the inventions of language, as they get other inventions, viz., second hand. When thus imitated, language, no more than the use of any other ready-made invention, implies thinking.

If we look at the matter, again, from the point of view of individual history or ontogenetically, we know that a child imitates language, as it imitates the other gestures and conduct about it, without question or deliberation. It

simply cannot help trying to perform the movements and expressions of those immediately about it. It is only later in life, if at all, that the net results of human development, as crystallized in words, come to signify thinking to the individual. Language, in other words, starts as one perceptual form of reaction. It develops into one kind of memory picture and establishes connection with other pictures and actions by the laws of association, though its greater economy tends to make it supplant the more concrete forms of associative pictures. Language may stand for all sorts of mental states. It may be the name of a perceptual complication, such as a tree or a stone. It may stand for a concrete image. It may symbolize an abstract relation or quality. But one thing is sure, we cannot take language as the synonym of thought. Even propositions, though they symbolize judgment on the part of some one, certainly are not judgments as they are found in the logic books, or in our school primers. Such propositions as: Is the dog white? Yes, the dog is white, and other equally solemn ones, probably did not convey judgments to the youthful seeker after wisdom of the primary grade; nor do the conventional propositions of the logic books, such as: All men are mortal; Socrates is a man; therefore, Socrates is mortal, convey much of the significance of the thought process to the average college sophomore. This significance can only be seen when we abandon our abstract formalism and return to the function of language in the active, living thought situation, with its problems, its resolution into a definite plan of procedure and its systematic reasons. Then we see that it is first through observing the characteristics of such men as Socrates that we see what holds for their kind; and afterwards all we have to do is

to identify the individual's kind in order to determine expectancy as regards mortality or other characters.

Language, moreover, like all tools, has its limitations. It must resort to all sorts of makeshifts to symbolize the complexity of thought. It must stereotype into static pictures thought's transitive relations. It gives the appearance of juxtapositions of subjects and copulas and predicates. It makes relations and qualities appear as entities or substances. It gives to individuals an isolation and fixity which are foreign to the real world of fluent transitions. No wonder this makes thought appear a hopeless mass of chopped-up abstractions to one who has not grasped the instrumental significance of language. To one who has grasped this, language becomes a marvelous framework or system of pegs for recording, communicating and fixating the relative constancies of our fluent inner meanings.

Nominalism, by confusing thought with language — reducing concepts to mere terms, judgments to the separation or juxtaposition of terms, and reasoning to the juxtaposition of propositions — makes thought seem artificial and arbitrary. With Bergson it makes thought a series of static pictures, like the photographs of the cinematograph, but in no respect imitating reality. Nominalism first makes a caricature of thought and then pronounces it impossible, as it certainly is on nominalist principles. What nominalism forgets is that the symbols need in no wise resemble the realities they stand for. The bill of fare isn't at all like the things it stands for, and yet it may be a very accurate and useful bill of fare. Were thought as arbitrary as nominalism makes it, we cannot see of what use it could possibly be in meeting reality.

We must also bear in mind that conveying thought is

only part, and a comparatively small part, of the function of language. Words serve the purpose of calling up trains of concrete images and awakening emotional attitudes more often than of conveying thought. The figure, to crucify on a cross of gold, served some years ago to stampede a whole political convention, yet what the words conveyed was not thought, but imagery suffused with religious emotion. The cry of the full dinner pail once won a presidential election, but its appeal was to the stomach not to reason. Some words are simply charged with emotional enthusiasm and impulsive energy, such as the words, Liberty, Fraternity and Equality, in the days of the French Revolution. Even in the acceptance of certain philosophical theories such as the Absolute, or the Unknowable, or idealism or realism, or Christian Science, the convincingness may not be due to thought, which is generally hard to find and which itself is apt to consist in reasons trumped up after the fact. The conviction is apt to rest upon the play of imagination, with the suggested emotions, which the words call forth. Hence, too, the theological convincingness of such terms as unitarian or trinitarian to masses of people who have no inkling of their philosophical significance. The vitality of language lies precisely in its being woven into the whole tissue of life — imaginative and emotional, as well as intellectual.

III

If we take up again the psychological analysis of thought, this has been scarcely more satisfactory than the lexicographical account of the old formal logic. There has been, in the first place, a very vague consciousness as to what thought is. In a large number of the experimental in-

stances reported, such as, London is to England as Paris is to —, it is not necessary to assume anything but passive association in furnishing the answer. It is extremely difficult to determine, under the artificial conditions of the laboratory, whether one is dealing with a genuine case of thought consciousness or not. There is no *a priori* way of telling whether a certain group of symbols or a certain situation means a real thought process to the individual subject or not. It might again be a case of thought consciousness, on the part of the operator who devises the situation, but merely a matter of habitual association on the part of the subject. There is no way of determining in the abstract when you have a genuine case of thought, a real judgment. This can only be done with reference to the situation which the will strives to meet. A statement which symbolizes thought with one, may symbolize merely conventional imitation with another.

An introspective account at best brings out primarily the training and methods of thought of the introspecting individual. Hegel gives us the typical introspective account in his Logic. Here the category of being suggests with subjective necessity the category of non-being; and this in turn the category of becoming, each category leading into the other until the circle is complete. But the implications and stages which he feels to be so binding in this subjective dialectic are chiefly interesting as throwing light on Hegel's own mind. His transitions have not proved coercive even over those who, in the main, adopt Hegel's results. They certainly throw no light on the prelogical stages of mind. All the way from Being to the Absolute Idea, we move within the universe of abstract thought. That one steeped in a scheme of logic should find such

a scheme implied in his own thinking, whether in formal or experimental introspection, throws considerable light upon the nature of the process of imitation, but not upon the process of judgment.

While again it is true that thinking terminates in types of conduct — the ability to meet a diversity of situations in a similar way — it is not true that wherever we find types of conduct, there, also, we have judgment. Here again we must be careful not to stop with a vague genus, but also to furnish the specific differentia. We must define the *kind* of type or *reflective conduct* as distinct from other types. Instincts and impulses also prescribe types — vague, general types. There are three such broad types of conduct even in the lowest animals — things to appropriate, things to get away from, stimuli to reproduction. In the higher grades of animal life, these instinctive types of conduct — spontaneous reactions to certain kinds of stimuli — become much more numerous. It is by the examination of conduct — the conduct of animals, of the developing child, of the grown man — not by mere introspection, that we can learn to differentiate definitely the perceptual stage of conduct, with its trial and error method of elimination and habit, from the memory stage with its short cuts for the concrete reproduction of situations; and distinguish definitely both of these from the stage of active analysis and synthesis — that of judgment. Each stage implies its own type of conduct; has its own characteristics. The suggestion of typical response differs with each stage. The sight of the mouse suggests the typical movement of the cat, the meeting of a friend prompts the proper reaction on the part of the man, the request of the stranger suggests examining his credentials. But it is only

on the last stage that we have *consciously defined types* or concepts.

Language fixes the more important thought attitudes, but it is too abstract and stereotyped to fix all. Out of those again that language has fixed, logic selects certain ones which are most convenient in studying the form of thought, viz., the categorical types. The syllogism is such a linguistic device, not for showing how people do think, though sometimes as a result of imitation thought may flow that way, but for exhibiting those identities which make thinking valid.

In the second place, the psychologist's analysis has been largely irrelevant to the real problem of thought. That is true especially of the controversy as to whether there is imageless thought, which has been so prominent of late. There doubtless are present some substantive contents — images, verbal or concrete, or at least certain kinesthetic sensations in the head and perhaps elsewhere. There can be no doubt in my case as to the kinesthetic sensations. I would not call them images in my case, as they are definitely located as tensions in the eyes, the facial muscles, about the nose and forehead, and in the throat. To find a case in the midst of the complexity of our mental life, with its mass of intra- and extra-organic sensations, of a pure abstract consciousness of thought transition, with all other contents psychologically eliminated, probably is more than the boasted laboratory method is likely to accomplish.

One reason for the controversy as regards imageless thought is probably the failure to distinguish between two kinds of thought attitude — one where the end or focal idea is more or less vaguely present, but where the context or means is to be made explicit in terms of this end; the other,

where we start with the consciousness of a more or less vague context, or means, but are trying to define a substantive content, the end. The former case can be illustrated by any attempt to meet a perceptual or ideal situation, where the manipulating of a given situation is the point in question. A door will not open, and so we must cast about for means; we must analyze the situation, to discover the real relation involved, in order to proceed with our conduct. But all the while, there is present in the perceptual focus of attention the substantive content, the perceptual door. The second case might be illustrated by the forgotten name. The actual object, the name, is the very thing that won't come; and so the will in seeking it must set to work through the various associative tendencies of its fringe to bring it into definite consciousness. Now in each of these two cases, substantive imagery plays a very different part. In the former case, a substantive picture occupies the foreground of consciousness all the while. In the latter case, the flights, the transitions or tensions, are the prominent part of our consciousness. In the former case, the picture or image seems to constitute the end, or at any rate to be a part of it. In the latter case, the imagery, in so far as it is present, seems largely instrumental, if not concomitant merely, to the train of thought. Those who maintain imageless thought seem to have in mind cases where transition stuff, sensory and affective, forms thought's only instrumental basis.

Take again the case of language. We may attend to the words as conveying the thought and be conscious of the niceties of the style thus involved; or we may be absorbed in the conative tendency itself, the transitive flight of thought; and typography and style then drop into the

fringe. In the latter case, again, the stopping of the attitude, in order to introspect it, may throw into prominence scenery which was merely concomitant before, consciousness being changed from interest in the objective attitude to interest in the accessories. No doubt the form of the page and the size of the print and the surroundings made a difference, but these again may have been merely concomitant to the conative activity. In any case, the perceptual or ideational pictures do not constitute the thought attitude, as the representative theory of thought would have us believe. They are instruments in its service, the perching places of its flight. But the flight is the thing.

IV

The thought attitude proper means, first of all, the active leading or control of the flow of processes by a conscious, organized conative purpose. It is in this selective leading, rather than in the type of imagery found, whether relevant or irrelevant to the process, that the essence of thought is to be found. To this concrete or verbal imagery, kinesthetic sensations, etc., are incidental. The controversy as regards imageless thought, if it has served no other purpose, has at least brought out the difference as regards the prominence and types of imagery in connection with the thought process. It is evident that the imagery and the concomitant sensations may differ widely in different individuals. But the thought process itself can be taken as the same, in so far as it points to and terminates in the same aspect of the situation selected; in so far as it leads to the same conduct. What must be emphasized is that it is the conative leading which constitutes the core of thought, not the imagery.

This leading, this sustained attention, this control of the

stream of processes by an idea, may or may not involve the consciousness of the feeling of effort. Whether this feeling is present or not in a noticeable way depends upon the degree in which we are baffled, upon the fascination of the situation in question. We may ourselves set the puzzle. Our whole attention may be absorbed in the search for means, and while there is hesitation and analysis, our consciousness may be entirely on the content and not on our subjective attitude, with its motor symptoms. What, in any case, *constitutes* the activity is not the feeling of effort, which is a mere reflex of its going on, but the sustained attention, with its weighing of alternatives, its passing in survey of the various tendencies or aspects of the situation, its try-out of various suggestions in order to hit upon the relevant characteristics or relations so that this specific type of conduct may go on.

Thought, we see, therefore, is a volitional process. It has its roots, like the other activities of our conscious life, in our impulsive and emotional nature. It is positive and not merely negative — not the mere absence of doubt, but the realization of a specific will. It may start in the practical necessities of life — the break-down of the conventional and habitual as regards practical adjustment. It may start in baffled curiosity, stimulated by the unusual. In any case, it means a fresh resolution of the situation involved, whether perceptual or ideal. It means getting at the character of reality so far as this special purpose is concerned.

We cannot divorce thought from the deeper will. We cannot draw a sharp line between reason and instinct. Thought is not the mere encrustation on the stream of life, irrelevant to its inner nature. It is not the subconscious,

wedged into the artificial vice of the brain. Thought is rooted in instinct and finds its fulfillment in realizing the demands of instinct, the meaning of which it reveals. Thought is a living, moving will, a will which has set itself a definite conscious goal — the regulation of its intent with reference to the nature of the environment. It is will, awake as to its direction. Instinct bequeaths to thought certain tendencies or demands, among them the theoretical demands which we shall examine later. Thought bequeaths to instinct the definiteness of articulate and self-conscious purpose, instead of vague groping impulse. All the while, however, this vaguer life is in the fringe of thought. It furnishes in large part the motive of thought, while in turn lighted up and guided as to its direction. Thought is not the mere focus, but the total set or determination, which selects and guides. The value of the subconscious lies in its contributing to this determination. Its reward lies in its own illumination.

If we were to contrast reason and instinct, we should say that it is instinct which is stereotyped and predictable. Creativeness lies not in the direction of animal vagueness, but in the direction of reason. It is thought which sets us free from the slavery to the past. And while thought sometimes proceeds intuitively, omitting formal steps and intermediaries, even here the fruits of thought usually imply the longer and more laborious processes gone through previously; and in any case the intuitive insight would not come except for the set of thought. Furthermore, if it comes like a gift, it must, like the Greeks, be tested before it can be fully trusted. The wisdom of the subconscious is the gift of previous thoughtfulness. Its authoritativeness must lie in its ability to meet the demands of experience.

Accompanying this state of deliberation, this weighing of hypothesis, this casting about for means, there is the consciousness of motor suspense or tension. The various tendencies to action block each other for the time being. There is the consciousness of uncertainty or doubt, the attitude of waiting. The idea of proceeding in one direction, with its impulsive tendency, is blocked by the idea, immediately brought forward, of proceeding in another direction. This state of oscillation or permeability may itself, as in the Hamlet type, form a cast of thought, preventing action, unless broken through by cumulative impulse or a higher resolution of thought.

Thought, further, involves a feeling of fitness when the idea terminates in its intended facts, when our intent is verified and our conduct again proceeds. This means, of course, a feeling of unfitness, when our intent fails to tally with the facts and when, therefore, either the idea or the reality intended must be altered in order to bring about the agreement. Excepting in cases where our will makes the idea come true, as in some cases of muscular and other bodily adjustments amenable to the will, our idea must respect the facts and terminate in them. When we have such a feeling of fulfillment, of fluency or ease in the resolution of the thought situation, we have the sentiment of rationality. And this can only be disturbed, in the particular case, when there is a fresh discord between idea and facts and a call for a fresh resolution of the situation, for an assimilation of new data.

Finally, the thought process is a unique form of activity. It cannot be resolved into more of perceptual assimilation or of passive association, any more than sustained or active attention can be resolved into the jerky, impulsive type.

Thought must, of course, work through the machinery of association. It is itself one type of the associative working of mind, both as regards recall and as regards assimilation of new data. What is unique about thought is its intent, its set, its activity. And this intent is to discover the leading or agreement in the variety of facts and tendencies; to produce point for point correspondence between the intent and its specific facts — not with the object in general but the object in so far as it is intended. The formula of gravitation does not correspond point for point with the bodies in space — their growth and life history. It only corresponds with them in so far as they are falling matter.

We see now how artificial is the tripartite division of mind into ideation, feeling and will. The truth process involves all of these. It is the realization of an idea, selected and fixated by the will, which has a definite hedonic value, as the process fails or succeeds of realization. The truth process is self-realization — the whole self striving to realize a definite end — the will to know.

CHAPTER V

The Morphology of Truth

In this chapter I wish to sketch briefly the various stages of the truth process. We realize now that thought is a living, unitary, self-defining activity. It knows of no such cut-and-dried divisions as words and propositions. These are its instruments, not its constituents. It flows over the narrow and arbitrary limits of our schemes of formal logic. It is ever alive and active, selective of the relevant features of the situation, prospective with questioning, retrospective with searching for means. It is a matrix of relations, reaching forward and backward and throbbing with will — not the pale ghost of the formal proposition or syllogism, which, however important for the effectiveness of thought's procedure, are only its artificial tools.

The real core of this thought activity is the act of judgment. And judgment, we have seen, means the active assimilation of a datum in terms of a context; and, in turn, the making definite of the context in terms of the datum. Since Spencer we have come to regard thought, not as an idle picture show, or marshaling of formal propositions, as in text-books on logic, but as a functional adjustment to a larger whole. The environment of thought need not necessarily be that of biological survival, though that was the absorbing interest in the early development of thought. Thought may be an adjustment to an ideal context, as in the working out of a geometrical problem. But thought always involves a problem and its solution. It always exists

for a purpose which is to be defined and made effective. There is no thinking in the abstract, however much thought may utilize abstractions. What the specific context which is to be defined is, depends upon our whole volitional attitude for the time being, for all real thinking is live thinking, throbs with desire and emotion. The context may be the whole of things, as in metaphysics. It may be chemical, it may be domestic, according to the dominant interest at the time. We must, in any case, understand judgment in relation to the matrix of experience and life as a whole.

The morphology of thought is the morphology of judgment. The thought process is fundamentally a judging process — a process of being actively attentive, of being awake with reference to the situation which we must meet. We shall see that a judgment is not an act distinct from the more elaborate processes of thought. The whole process of thought, even when most elaborate, is an expansion and making definite of a judgment. Our thinking, in other words, is not chopped up into parts, but every developed thought runs the whole gamut of the scale of judgment and inference. Our thinking is always of reasons, of relations to our former experience — all in the service of the situation which we must meet; and the upshot of our thinking is always some sort of a concept or definition, which enables us ever afterwards, in so far as it proves true, to meet a similar situation at sight.

We have seen that judgment, in the case of the individual, rests on a background of habit and imitation, which furnishes the mind with a stock of adjustments, biological and ideal, ready-made. This is the affirmative background of judgment. Those who have insisted that the affirmative judgment is prior to the negative, have neglected to

analyze the real thought situation. They have assumed that, because certain attitudes or adjustments are presupposed; because, for example, we have a stock of conventional propositions, therefore we start with affirmative judgments. Taking these cold-storage propositions as judgments, they have insisted that the affirmative judgment comes first, and that the negative judgment is secondary — an affirmative judgment of the second degree. They have imagined that the judging process starts as a passive repetition of impressions, and since there can be no impressions corresponding to the negative judgment, they have assumed that the affirmative judgment must be earlier. But we have seen that we think only in the face of a problem, in response to the demands of a situation, whether posited by the will to think, or whether it is forced by the practical necessities of life. There is a thwarting somehow of the on-going activity, the stream of processes is interrupted with a call for fresh adjustment, now in the interest of practical life, now to set at rest theoretical curiosity. We must rule out, therefore, from the scope of judgment such verbal expressions as are merely a suggestion of the perceptual or associative situation on the part of the spectator. The so-called impersonal judgments, for example, are usually not judgments at all. They may be merely the result of verbal associations. When a child points out of doors toward the snow storm and says, "Snow," this may merely mean that the perceptual situation, by contiguous association, suggested the word, "snow." We have judgment only when attention attempts actively to analyze and control a novel situation. Where such analysis and control is lacking, we must resolve the mental situation into the proper lower complexes of experience.

This being the case, we must, contrary to logical tradition, hold that the negative judgment is the earliest form of judgment. We wake with a shock, and that shock means *no*. "It won't work." "It is not as expected." "I am baffled." "This is different from the usual." Such, if words were used, would be the equivalents of the first thought orientation. Our first consciousness, in the breakdown of the old habits or customary forms of adjustment, is a consciousness of *no*. We would never wake with a *yes*, though we may, once we are awake, sustain it for an indefinite period in an organized consciousness. In thought, at least, the consciousness of non-being precedes being. What blinds us to this fact is that, as a rule, the judging consciousness presupposes the customary or habitual — our conventionalized or cold-storage judgments, which have lost their thought significance.

The thought process, as such at any rate, does not start with the categorical judgment. This is rather the perching place of thought after its zig-zag flight of deliberation. Once life is organized, thought itself may be interrupted in this wise; may break down in the face of new facts. In such a case, it is indeed true that the negative judgment is the denial of a previous affirmative judgment in our own stream of consciousness, though in this case we must be careful to distinguish between the *bona fide* judgment of the individual, and such beliefs and hypotheses as he accepts merely on the authority of others. The negative judgment, in developing thought, may also be the denial of a judgment or a question raised by some one else; but more often, it is a waking up from the habitual and conventional, into which it is so economic and so easy to fall. Thinking is a strenuous form of life; and unless we learn

to take an athletic enjoyment in it, we soon drop out altogether.

We must distinguish the problem of the psychological priority of judgment from that of its logical significance. Is the affirmative judgment logically prior to the negative? We must answer that the two types are merely complementary aspects of a self-defining process, and that the question of priority here is idle. Judgment means recognizing the differences as well as the likenesses of the contents selected. All relation is differentiation. All determination is limitation. In a world of pure identity, thinking would not be heard of. We string our facts, by their differences as well as their identities, into classes and series. We spread them out into a system. It is Hegel's immortal merit that he recognized that *Negativität*, significant denial, is the indispensable backbone of all systematic thought. Except for this, all of our data would be swamped in an undistinguishable night where all cows are gray. Denial and affirmation are equally essential to the going on of the developed thought process. In systematic definition, recognizing differences and their degrees becomes as important as recognizing likenesses and their degrees; the negative judgment as important as the affirmative. All negation, moreover, is with reference to a context, and so implies affirmation within a system. So, in turn, affirmation implies negation. As in the beginning of the thought process, the new thought consciousness negates the abstractness of previous habit and convention, so in the sustained thought process the larger synthesis negates the abstract, inadequate, previous generalization.

This does not mean that the psychological moment, which affirms or denies, recognizes the full implication

of the implied affirmation or denial within the system. The moment which affirms may not be psychologically aware of the implied denial; and the moment which denies may not be conscious of the implied affirmation. In the stream of thought, it may require another moment, individual or social — a critical moment as superimposed upon the constructive — to see the full logical implication of the will attitude as stated. This, however, is a question for psychological introspection to settle.

Because, within a significant system, all affirmation means exclusion and negation, the limiting of the field of the possible more and more to the actual, it has been maintained that the judging process is fundamentally negative, and that thought proceeds by the mere destruction of possibilities. While negation, however, is fundamental in the thought process, we cannot disregard the positive consciousness of the process, the seizing upon the identities and constancies in the midst of the variety and flux of the process; for without the sustained interest of a purpose which dominates the process, which selects and rejects, without the consciousness of the fulfillment of the idea, which is present and leading throughout the process, denial would be as impossible as affirmation. This sustained and positive leading, the negative theory of judgment fails to take into account.

The question may yet be raised, as to whether the attitude of the mind which we have called the *no* consciousness, has objective significance, expresses a movement of reality, and not merely a subjective movement of thought. Both positions have been taken in the history of thought. Which position one adopts will necessarily depend on one's theory of reality and one's conception of the place

of thought in the final scheme of things. The mystics who look for reality beyond thought, the pure empiricists who look for reality in sensations, and the materialists who regard reality as extra-mental — these all join hands in holding that thought is merely instrumental, and that reality is something different from thought, whether lower or higher. As the judging process itself becomes subjective in such theories, the negative judgment, as such, would of course have nothing corresponding to it in the real world. But on such a view, the affirmative judgment, as little as the negative, can be regarded as imitating reality.

If, on the other hand, we regard reality, with the absolute idealist, as awake at every movement and at every point, — a complete self-conscious system of experience, — then the process of negation cannot help being regarded as of ultimate significance. The movement of reality and the movement of thought become identical in such a world. We think God's thoughts after him. Our finite experience imitates point for point the absolute experience. If, however, we do not choose to dogmatize about reality as a whole, but modestly take it as it appears in our finite experience, — as thinking where we must acknowledge it as thinking; as non-reflective where we must so adjust ourselves to it, — in that case we must hold that negation is an objective and essential factor, whenever we take account of thought as our object, wherever we deal with a systematic process. And that reality thinks in spots we have absolute evidence of in our thinking, if we raise the question at all.

We have dwelt at such length upon the negative aspect of the judging process, because it reveals the fundamental unity of the thought moments throughout the process of

judgment. It is not the only aspect. With it, there must go the consciousness of direction, the attempt to realize a purpose or set, however tentative for the time being. Without the consciousness of a problem, there could be no process of thought. The no consciousness with its sense of being baffled is followed by the casting about for means, the active analysis of the situation on the basis of a guess or hypothesis. We might call this second stage in the development of the judging process, the hypothetical stage. We try out various alternatives on the basis of our tentative guesses, which are continually being modified as our efforts lead toward failure or success, as thought becomes warm in its search for its object.

In using the adjective, hypothetical, to indicate this trial stage of the judging process, we must remember that in traditional logic the use of this term has been decidedly ambiguous. It has sometimes been used to indicate doubt, and the effort at rearrangement in the case of such doubt, the passing from one equilibrium to another within the process of thought. In this case it stands for the suppositious or tentative aspect of the thought process, to which we have already referred. But the term hypothetical, has also been used to indicate the relation of ground and consequence. And by virtue of this use the hypothetical type of judgment has become indistinguishable from the categorical. Of this latter use we shall speak later.

The trial stage in the thought process may take a more systematic form where knowledge is already organized in the given direction — the form of a disjunction of alternatives, of an exclusive and exhaustive survey of possibilities, as made possible in advanced science. This, however, is only an enlargement or a further making

explicit of the hypothetical or trial stage, which we have already noticed. It is a recognition of the complexity of the ideal situation. As thought becomes organized, we can economize, through our ideal schematization, the process of actual try-out. This assures greater efficiency of result. By analyzing the various suggested alternatives, we are more likely to discover the relevant leading for pursuing our search; and, moreover, the destruction of alternatives becomes, with such organization, itself fruitful, not only in narrowing the domain of search, but in indicating the direction of the quarry that is hunted. This does not mean that we calculate planets into existence, as has sometimes been stated. It means that we can pursue the simplest and likeliest possibilities first.

The provisional result which is attained at any one time, and which suggests belief and conduct, constitutes the categorical stage of the judging process. The process of thought is circular. It starts, we have seen, with negation, or the need for fresh adjustment, whether as a result of practical necessities or baffled curiosity. It proceeds through the trial stage of ideal construction and verification, which flows out in advanced knowledge into the disjunctive schematization of alternatives. And its perching place, after the long or short flight, is the adopting of a provisional scheme for conduct. The self adjusts itself as best it can to the new situation, thus analyzed and made its own. The end of thought is a consciously adopted type of conduct. The judging process terminates in a method of control or plan of procedure, physical or logical.

This version of the thought process gives us an intelligent idea of the place of the concept. The concept is

the completed form of the categorical judgment at any stage of the history of thought — a conscious definition, a definite program of action. There has been no end of confusion as to the place of the concept in the treatment of thought in the past. Sometimes the concept has been identified with a substantive word or term. Sometimes it has been identified with the class term; and the judgment has itself been regarded as a comparison or subordination of class terms. Sometimes the concept has been indentified with any abstraction on the part of thought or previous to thought, in the way of quality or relation. It is safe to say that the pragmatic significance of the concept in modern logic has been practically nil. We must go back to Socrates, the inventor of the concept, for its true significance. And to Socrates the concept means a definition, with its proximate genus and differentia. The concept thus becomes not the beginning of the thought process, but its terminus — the description and identification of the situation for future conduct. The concept is the making definite of the fringe, of the tentative leading. The prospective tendency finds its determination through the data which it must meet. The centrifugal intent has reached its circumference and reflects on itself. This does not mean that the concept cannot grow. On the contrary, it is made increasingly definite in the progress of experience. It means that provisionally at least, as a halting place in the march of thought, we have arrived at a plan for further procedure. If figures were not misleading, we might liken the thought process to a spiral, rather than a circle, for thought keeps turning upon itself as enriched by further experience.

The categorical judgment, in turn, just because it is the

settlement of a case for the time being, is apt to become a rule of thumb, a creed or formula, and to be imitated unquestioningly. It then ceases to be a judgment, and becomes convention — thought stereotyped into social habit. From this, owing to the complexity and changing conditions of life, a fresh outbreak, a new adaptation, is likely to follow with the same process of denial, hypothesis and affirmation, and with a new working concept resulting. This stereotyped or cold-storage judgment, however, into which the mind so easily lapses, is not to be taken as deduction, as contrasted with induction. It is not judgment at all, for judgment means being awake, being actively interested in the situation. The cold-storage judgment is merely a substitute for thought. The deductive judgment is no more habitual than the inductive. We may meet a novel situation either deductively or inductively, according to the mind's store of experience. In either case we are awake; in either case we substitute for the concrete instances a universal or type. On the other hand, habit may take the place of induction as well as deduction, as thought arrives at a new equilibrium. Even animals sometimes proceed as though they had made an induction, though acting from mere instinct or habit.

The only way we can have a strictly universal categorical judgment, is by isolation and abstraction of characteristics. It is in this way that science proceeds in establishing its so-called laws. Generalization, so long as we proceed by enumeration of instances, must always be of a purely tentative character, a merely probable and uncertain guide. Truth must go beneath the mere variety of instances to the singling out of the constant characteristics which enable us to predict for the future, however necessary it may

be under our limitations to act on incomplete knowledge. There is strictly no such thing as a concrete universal. We always buy universality at the expense of breaking up the concrete fullness of reality, and dealing with certain partial aspects. Our definitions are always for a purpose, and necessarily leave out the many other ways of taking reality, which, with another conative set, become essential. We neglect beauty when our interest is in weight, but so can we neglect weight when our interest is in beauty. Our selected universals or laws are justified, if we thus can dip into the concrete stream of experience and meet its situations. The statement, all men are mortal, is not a census of all men, which would be impossible, men being an indefinite quantity. It is a prediction based upon certain abstract considerations as regards organic structure, nutrition, wear and tear, excretion, etc. At any rate, only as based upon such considerations would a universal judgment be justified. As a scientific judgment, it stands on the same ground as, all bodies gravitate, which also pertains to a selected characteristic of bodies. Concrete statements, based upon mere customary conjunction, would have to be treated on the basis of probability. And while the psychological probability would be very strong, in the absence of a negative instance, still no universal prediction could be based upon such conjunction. In the disjunctive judgment of chance, the disjunction itself is based upon analysis and abstraction of a certain constitution of the object; and so here we have a case of real judgment, however impossible concrete prediction of the particular instance may be.

It has sometimes been stated that all our universal judgments are hypothetical. This, we have already seen, is due to an ambiguity of language. We can always state

the ground and consequence, the abstracted characteristics and our expectations founded upon them, in hypothetical form. But this does not mean that our knowledge is in this respect tentative or uncertain. So stating it is merely a trick of language. It is precisely in dealing with these abstract characters that we can make definite universal statements about reality. Wherever these characters repeat themselves, we can expect the same consequences to follow, whether in geometry or in chemistry. Where we fail to discover such identities, we must be satisfied with particular judgments and probabilities.

It must be clear now that the process of truth is a process of judging. The rest is machinery in the service of the active interest which dominates consciousness for the time being. On the other hand, it must be clear that there is no such thing in thought as a bare, isolated judgment. Judgment is always a process, with beginning, middle and end, the developing of a drama of determinate interest. The traditional names of judgment we have found to be mere stages, artificially isolated from this concrete process. Judgment, inference and concept again are not different activities. Inference is merely the expansion of the judgment into its reasons, machinery in its realization. And the concept is the provisional halting place of the judging process. What thought really means is *identification*. We identify Socrates as a man, if this is really a judgment; and then we proceed to act toward him accordingly. Better, if we had lived in Athens in 399 B.C., we would have identified a certain man as Socrates, and then proceeded to condemn or apotheosize him. We fail to identify radium as one of the elements, already labeled, and then proceed to find a new element by experiment and isolation. We iden-

tify the individual situation as belonging to a type; and then we adjust ourselves to it accordingly. The reduction of life to types is the purpose of thought — in social life, in nature, in the world of ideals. This achieved, thought proceeds with fluency until the type itself is questioned.

Induction and deduction have sometimes been emphasized as distinct forms of thought, induction proceeding from the particular to the universal, while deduction is supposed to proceed from the universal to the particular. We can no longer acquiesce in such a definition of induction and deduction. The thought process, in either case, is essentially the same — the defining of a particular in terms of a context or the making definite of a context in terms of a specific situation. In either case we must schematize: we must see the part in relation to the whole. The difference between induction and deduction does not lie in the absence or presence of the universal, but rather in our belief attitude as regards the universal. In induction this belief attitude is tentative, looking forward for verification. The evidence is felt not to be all in, though the generalization is by no means baseless, but is founded on analogy and observed identities in experience. In the deductive attitude, again, the feeling is of the evidence being in, of definite action now being possible. The attitude is retrospective as regards confirmation, but prospective as regards conduct or the fulfillment of the specific conative tendency. In deduction, we identify the situation as belonging to a type, and proceed to act accordingly. In induction, we suggest the type to which the situation may belong, and proceed to try out our suggestion. Psychologically, we may say that the consciousness is the reversal of that stated in traditional logic. In deduction we have

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the consciousness of going from the particular to the implied universal, while in induction we suggest a universal for the particular, *i.e.*, the emphasis in deduction is on the *new instance*, in induction on the *new universal.* In either case, we confront a novel situation in terms of a universal or type. If in induction we may be mistaken as to the guiding universal, so in deduction we may be mistaken in identifying the new instance with a well-known type. Both attitudes must be open to revision in further experience. Only as this active consciousness of relation to a context, with its reasons, is maintained, do we have thought at all. And this is equally characteristic of deduction as of induction.

As the real problem of thought is the identifying of an instance as belonging to a type, so the real and only requirement of thought is what logic has called distribution — the distinct isolation in thought, if not physically, of the relevant character from the complex situations in which we find it. This is the discovery of the middle term. And this is equally important in concrete induction, where we deal with perceptions, as in formal deduction, where our facts are ready-made propositions. In each case, logic has laid down certain technical rules or precautions for distinguishing this middle term. In formal logic, we have an organized technic called the syllogism, with its canons for testing this identity as implied in the linguistic form of the argument. We must make sure that we have real identity of content and that we take this identity in no other way than as indicated in the data — the propositions which we have set ourselves to analyze. In the case of concrete induction, we have found that we cannot establish a thread of identity in the many instances by merely taking

account of agreement. We must also take into account the negative instances, through supplementing the method of agreement with the method of difference, the combined method of agreement and difference, the method of concomitant variation, and the various statistical methods which we must use in dealing with the more complex masses of facts. But everywhere the object of this technic is the distributing of the middle term, *i.e.*, making the identity or universal clear and distinct. This is the only requirement of thought. This does not mean that we talk syllogisms, or consciously think in the forms of the syllogism. This is only the diagram or schema for exhibiting the relations as implied in thinking. The order of the premises in the syllogism is due to our convenience for exhibiting these relations and need not coincide with the order in actual thinking. Moreover, in actual thought, we seldom express the full implications of our reasoning. Ordinarily certain general assumptions remain unstated as obvious for the particular procedure. And ordinarily we need not stop to draw the formal conclusion. It has been said that the conclusion overshadows psychologically the premises. This is not generally true. The pivot of our thinking is the so-called minor premise, the identification of the new situation with a type. Newton identifies the falling moon with the generalizations already attained by Galileo as regards falling terrestrial bodies. But probably the tentative conduct in the way of equations followed immediately upon the suggested identification of the type. The cashier at the window identifies his customer as belonging to a type, and regulates his conduct accordingly without formulating the major premise or conclusion. The policeman identifies a certain man as a dangerous criminal and proceeds to arrest

him. He does not argue in full: All criminals should be arrested; this man is a criminal, therefore he should be arrested. Action takes the place of the formal conclusion, and the major premise is taken for granted.

While this is true, while the identification of a type is the essential aspect of reasoning, we can, whenever we so choose, supply the larger context presupposed in the argument; and we can also draw the conclusion which is implied in our procedure. The cases in which it has been maintained that the syllogism is not applicable — such cases as involve space and time relations and quantitative comparison — will be found to be cases where the major premise has not been stated. Certain presuppositions, as regards the nature of space relations and time relations and of the abstract postulates of quantitative comparison, are as a matter of fact implied in our judgment, and *can* be made explicit, though it is generally superfluous to do so. All arguments, inductive and deductive, in so far as resolvable into language, are statable in the syllogistic form, if we care so to state them. In any case, we get out of the syllogism only what we put in; and if we put in probability, we can draw only probability.

It has been stated by recent psychology[1] that the truth of a proposition rests upon its being believed, that the ultimate test of truth is that some one believes, and that the task of assuring the truth of a statement is the task of making the individuals concerned believe the proposition that one is endeavoring to establish. This confusion of the basis of belief with the basis of validity seems a regretable result of the patronizing manner with which recent

[1] This is the impression I get from a thoughtful book by Professor Pillsbury, "The Psychology of Reasoning." See especially pp. 205 and 231.

psychology has treated elementary logic. Since Aristotle, formal logic, for which contemporary psychology has such contempt, not only has recognized the difference between being believed and being valid, but has reduced to technic the various fallacies which are due to belief. Such reasons for false belief may lie in lack of sagacity in discerning the relevant middle term; in the confusion due to the ambiguity of language, which sometimes gives us the identity of a word instead of identity of content; in the bias of our training as a result of past prejudices and traditions; in our own emotions and temperament; in faulty observations, such as the emphasis of the affirmative instances, and the neglect of the negative; in the distraction of the attention from the real issue by a mass of verbiage and irrational appeal; in the substitution of mere psychological sequence for causal connection, etc., etc. It is true that truth coërces belief; but it is far from true that belief, however strong for the time being, can make things so, unless belief itself creates its own facts.

There need be no relation between the grounds of belief and the grounds of truth. Belief looks backward to the past, to our temperamental and social heritage, our psychological associations, to custom and habit. Truth looks forward to consequences, to correspondences, to conduct. Whatever our beliefs may be, that is true which terminates in the intended facts. Hence the dogmatism of faith, on the one hand, and the necessary open-mindedness, humility and tolerance of the real truth seeker, on the other. However prone belief is to close the accounts, the investigator knows that the full truth lies in the future and that he must take as provisional his fragmentary insight.

CHAPTER VI

The Content of Truth

Locke, in classifying the operations of the mind with reference to its content, has shown that three different types of activity are involved—the activity of compounding, which gives us our various complex ideas, including substances; the activity of relating, which arranges our contents side by side and observes their likenesses and differences, as well as other relations; and the activity of separating which gives us our abstract ideas, which are so important for descriptive purposes. Now Locke rightly points out that the process of truth has to do with the second type of activity. It is a process of relating, or as he himself puts it: "Knowledge seems to me to be nothing but the perception of connection and agreement, or disagreement and repugnancy of any of our ideas."[1] This agreement according to Locke is fourfold. It concerns identity or diversity, which means, "to know each what it is, and thereby also to perceive their difference, and that one is not another." It concerns relations, in a limited sense, viz., "in several ways the mind takes of comparing" its ideas. It concerns further the coexistence of ideas in the same subject, or that one idea always accompanies or is joined with certain other ideas. And it concerns lastly the agreeing of any idea with actual or real existence. "Thus blue is not yellow, is of identity. Two triangles upon equal bases between two parallels are

[1] "An Essay concerning Human Understanding," Bk. IV, Ch. I, § 2.

equal, is of relation. Iron is susceptible of magnetic impressions, is of coëxistence. God is, is of real existence." [1] Locke realizes, however, that all these cases of agreement are merely different relations between the contents of our experience, and defines actual knowledge, as opposed to what he calls "habitual," or what James would call "cold-storage," knowledge, as "the present view, the mind has of the agreement or disagreement of any of its ideas, or of the relation they have one to another."

Locke's whole scheme of knowledge is beautifully worked out on the basis of this theory of relations. "The degrees of our knowledge," for example, depend upon our mode of discerning these relations of the contents of experience. The mind may immediately intuit the agreement or disagreement of two ideas, without the intervention of any other, which is the most certain kind of knowledge. As Locke puts it: "This part of knowledge is irresistible, and, like bright sunshine, forces itself immediately to be perceived, as soon as ever the mind turns its view that way." [2] Moreover, "it is on this intuition that depends all the certainty and evidence of all our knowledge," for "this intuition is necessary in all the connections of intermediate ideas." Less certain is demonstrative knowledge, "where the mind perceives the agreement or disagreement of ideas, not immediately," but by the intervention of other ideas, as in the case of the equality of the three angles of a triangle to two right angles.[3] Least certain is sensitive knowledge which has to do with the "perception of the mind employed about the particular existence of finite beings about us." When again he takes up "the extent of our knowledge," he easily makes clear that knowledge can extend no farther

[1] *Ibid.*, § 7. [2] *Ibid.*, Ch. II, § 1. [3] *Ibid.*, § 2.

than we have ideas and can perceive the agreement or disagreement of such ideas.[1] When further he takes up "the reality of our knowledge," he shows with the same clearness that our knowledge is real just in so far as our ideas terminate in the intended facts, whether those be our own complex ideas, or our immediate experiences of things.[2] While our knowledge of real substances is limited, yet here too "our complex ideas of them must be such, and such only, as are made up of such simple ones, as have been discovered to coëxist in Nature." In any case, "whatever ideas we have, the agreement they finally have with others will still be knowledge."

Speaking now in terms of judgment, we must hold that the judging process cannot be stated in terms of attitude alone. We must also take into account the relations of the content. The judgment, in other words, involves two things. It involves, on the side of the will, a specific attitude or set. It involves, on the side of the content, certain relations which the judging process must imitate. It is impossible to define judgment, either purely in terms of attitude, on the one hand, or merely in terms of content on the other. This has been the mistake in many of the past theories of judgment. Judgment is a certain set towards certain content relations. We are here concerned, however, not with the set, but with the relational content of the judging process. If judgment subjectively means being awake, sustained attention, we must also define the nature of its content. Awake about what? Sustained attention to what? It is being awake with reference to specific content relations or content complexity, which it

[1] "An Essay concerning Human Understanding," Bk. IV, Ch. III, § 2.
[2] *Ibid.*, Ch. IV.

aims to copy, that makes judgments true or false, and which distinguishes judgment from the mere association of ideas. "The judgment," as Russell puts it, "is true when there is such a complex, and false when there is not."[1] Or, as Locke long ago put it: "Truth, then, seems to me, in the proper import of the word, to signify nothing but the joining or separating of signs, as the things signified by them do agree or disagree one with another."[2]

Before treating of the epistemological significance of the relational consciousness, I wish to say a few words as regards the psychological analysis of the problem. Are there, on the side of consciousness, feelings of relation of a unique kind? Or are these feelings of relations reducible to sensations? Is our consciousness of likeness and difference, of side by side, of before and after, of cause and effect, of significant meaning, reducible to mere sensations in the head or throat? Is the consciousness of the activity of thought, in short, reducible to kinesthetic images and sensations?

It seems to me that those who analyze relational consciousness into kinesthetic images and sensations confuse the physiological concomitants and their sensations with the nature of the thought process itself. The sensations and images do not constitute the intent — the sense of fitness, the fringe of meaning — of the thought process, whether such sensations are present or not. We cannot interpolate them into the thought process. They vary independently of the intent, all the way from focal prominence to zero. They may exist in all sorts of forms, when they are present, without relevance to the on-going of the thought process. It seems to me as if Titchener and others had made the

[1] Russell, "Philosophical Essays," p. 184.

[2] Locke, "An Essay concerning Human Understanding," Bk. IV, Ch. V, § 3.

same mistake with regard to our feelings of relation that James made in regard to mental activity in general. They have substituted physiological symptoms, with their concomitant sensations, for the nature of the process with its definite consciousness of direction.

In a similar manner, we cannot define this intent of thought in terms of a static context of ideas and sensations. Rather, it is a dynamic will, with its definite set, controlling and selecting relevant contents, which gives the process this unique feeling for fitness, this sense of welcome or rejection, this sense of meaning. This dynamic leading, corresponding to the whole movement of thought, the structural psychologist, with his abstract atomism, has lost sight of. To me, at any rate, the thought set or intent is a unique fact, a specific content not reducible to sensations. It makes a difference whether sensations are the contents of thought or merely the symptoms or concomitants of thought. The kinesthetic images and sensations seem to me to be the latter.

If we address ourselves now to the epistemological significance of the relational content of consciousness, we must face the question whether these relations are to be taken as internal relations or external relations. Do the relations depend upon the nature of their terms — being, therefore, uniquely determined within a total inclusive system of significance; or are relations external to the natures of the terms, and can other terms be substituted without changing the relations and *vice versa?* As Russell defines external relations: "The term A may have a relation to a term B, without there being any constituent of A, corresponding to this relation."[1] This problem of internal and external

[1] *Jour. Phil. Psych. and Sci. Meth.*, Vol. VIII, p. 159.

relations may be taken in two ways. It may be taken as having to do with objective or content relations, or it may be taken as having to do with the relation of knower to known. The problem in either case is the same: Is the content uniquely determined by its context, or can it be taken as figuring indifferently in a number of contexts? Can any part of experience be exchanged, or does it adhere to its context in such a way that it alone can fulfill the demands of the specific whole?

Both of these positions have been taken and worked out to their extreme consequences. Absolute idealism insists upon internal relations, neo-realism upon external relations. According to absolute idealism, every fact belongs to a system, its nature implies the system. We cannot understand any part of the universe, root and all, without following out its implications in the whole, nor can we understand the whole, except in terms of its interwoven parts. It is only the abstract symbols, such as we use in mathematics or language, which are exchangeable. The real contents themselves are uniquely determined. As put by Royce:[1] "There is an absolute experience for which the conception of an absolute reality, that is, the conception of a system of ideal truth, is fulfilled by the very contents that get presented to this Experience. This absolute experience is related to our experience as an Organic Whole to its own fragments. It is an experience which finds fulfilled all that the completest thought can rationally conceive as genuinely possible. Herein lies its definition as an Absolute. For the Absolute Experience as for ours, there are data, contents, facts. But these data, these contents, express, for the Absolute Experience, its own meaning, its

[1] "The Conception of God," pp. 43–44.

thought, its ideas. Contents beyond these that it possesses, the Absolute Experience knows to be, in genuine truth, impossible. Hence its contents are indeed particular, — a selection from the world of bare or merely conceptual possibilities, — but they form a self-determined whole, than which nothing completer, more organic, more fulfilling, more transparent, or more complete in meaning, is concretely or genuinely possible. On the other hand, these contents are not foreign to those of our finite experience, but are inclusive of them in the unity of one life." The same position has been stated by Joachim, bringing out its negative as well as its positive implication.[1] "Truth, we said, was the systematic coherence which characterized a significant whole. And we proceeded to identify a significant whole with 'an organized individual experience, self-fulfilling and self-fulled.' Now there can be one and only one such experience: or only one significant whole, the significance of which is self-contained in the sense required. For it is *absolute* self-fulfillment, *absolutely* self-contained significance, that is postulated; and nothing short of *absolute* individuality — nothing short of the completely whole experience — can satisfy this postulate. And human knowledge — not merely *my* knowledge or *yours*, but the best and fullest knowledge in the world at any stage of its development — is clearly not a significant whole in this ideally complete sense. Hence the truth, which our sketch described, is — from the point of view of human intelligence — an Ideal, and an Ideal which can never as such, or in its completeness, be actual as human experience."

If we state the problem from the subjective point of view — the reading of the universe in terms of the impli-

[1] "The Nature of Truth," Oxford, 1906, p. 78.

cation of our own subjective meaning — knowing reality becomes merely a question of knowing what we mean. The difference between internal and external, from the point of view of epistemological idealism, is purely a relative one. What seems external is merely so because of our failure to know our own real meaning. Our meaning, in other words, is part of a systematic whole, reveals this whole point for point, if we only become completely conscious of our own meaning. Knowledge is thus the passing from a confused consciousness to a clear and distinct consciousness of our own experience. The finite self, like Leibniz's monad, in knowing itself, knows the universe. It matters not, then, where you start, whether you start with your subjective meaning, or some one else's meaning, or with a fragment of nature; the dialectic of experience will bring you face to face with the completely organized and self-revealing experience of the universe.

If you object to the monotony and lack of variety and contingency in such an idealistic world, the absolute idealist has no difficulty in pointing you to types of ideal universes which present all the elements of fascination and discovery that thought could ask. Take for example the ideal universe of number. While it is true that every part of the number system, rational or irrational, is determined by the concept of number, it is also true that in this ideal constitution, the particular numbers possess their own unique and individual significance which cannot be read off *a priori*, but must be ascertained by actual discovery in the course of experience. Here individuality and contingency exist as aspects within the self-consistent and determined whole of thought. And what is true of

number, in the small, is true of the entire universe, or reality in the large.

Now, in the first place, there is nothing contradictory in such a conception of internal relations. We are familiar with such internal relations, involving the nature of the parts, in every teleological whole; and that there are such significant wholes, we all must admit. In a logical system, for example, such as geometry, the parts clearly depend upon the sort of whole which we have postulated. One part of the syllogism points to the rest, and we cannot reconstruct the other parts from it. A fragment of a statue or other work of art, points to a completion which we can at least schematically indicate, even though filling out the complete context involves other unique relations which cannot be construed *a priori*. The Winged Victory plainly indicates its fragmentary character to the imagination, even though no artist dares complete the actual marble. The femur of an extinct species indicates to the paleontologist the general structure of the animal in question. Words in discourse cannot be shuffled at random. The word belongs in its context. If we cannot conceive internal relations, the interpenetration of parts in the fulfillment of a purpose, all teleological constructions become impossible. It is not true within a teleological whole that parts can be exchanged indifferently to their relations. You cannot substitute the head for the hand within an organism, or the beginning for the end of the drama. The parts plainly indicate that they belong together and are uniquely determined by their relations to the whole.

The relation of whole and part comes to seem contradictory only when we verbalize the relations, and substitute our intellectual abstractions for the specific fulfillment of

the will with which we started. We must always remember that thought is not another compartment of experience, distinct from will, but thought is will articulated, awake as to its intent and organization; and our being awake as to the completeness of the fulfillment of the will, in its complexity of parts, as in the tonal unity of a melody, does not disrupt the whole or make it the less a whole. Nor does it follow because the parts of the whole have internal relations, that they are exhausted in these relations. The parts have individuality, too. The tone has its individual character, though it blends into a larger melody. Each number is an individual as well as a member of a system. The judgment while it is part of the argument also has reality as judgment. In all such teleological cases, it is plain that the part implies the whole, and the whole implies the part. This implication does not mean mere numerical taking or spatial juxtaposition. Rather it is the fulfillment of a specific, self-realizing will. Neither parts nor whole exist as such, except as the embodiment or positing of a will. It is the will which frames wholes and which demarcates parts within wholes according to its interest and emphasis. We may regard the part as a function of the system or the system as the unity of parts. But this is merely a question of the limitation of our attention. Neither exists except as the embodiment of a unique will. Neither parts nor wholes exist as pure abstractions which are quantitatively comparable.

If we assume, on the other hand, that the teleological relation of whole and part is contradictory, and if truth necessarily implies such internal relationship, this objection would destroy not only the idealistic theory of truth, but all possibility of truth. For whatever may be the relation

of truth to its object, truth itself as a system of judgments is a teleological unity of parts. But the supposed truth that all truth is contradictory, is self-refuting and does not prove the impossibility of truth, but the absurdity of a certain theory of truth. I do not see *a priori* why a context cannot be systematically conscious of itself without contradiction; or why we should not logically take account of, as well as appreciate, any teleological whole — its internal relations, its fitness of parts, its significant unity. And there is no need of supposing that this taking over of the relations in individual consciousness in any wise disrupts the unity or makes the context contradictory. Whenever internal unity exists, whether esthetic or ethical or logical, there thought can as truly trace this unity from part to part. A work of art can be understood as well as appreciated. It is constructed according to certain principles, which can be grasped *a posteriori* at any rate, as we always have to grasp the concrete, however different the attitude of understanding is from that of appreciation. What we grasp in taking account of the unity of the object is not the attitude, but the character of the content. The attitude of the spectator does not make the unity in art any more than in science. The unity in either case must be implied in the content as well as apprehended by the will.

What naïve realism has had in mind, doubtless, is that we can abstract contents from their contexts, the qualities from the thing, the relations from the parts. Having thus abstracted them, we can regard them as independent entities and treat the relations as external and indifferent to the terms and the terms to the relations. But however convenient such abstractions may be for certain descriptive and practical purposes, qualities and relations *only exist* as taken

in contexts. And in significant contexts, contents and relations no longer stand out as separate entities, but the contents themselves suggest the ideal relations. The contents have their own significance as molded by the will into ideal unity. The distinction between contents and relations becomes here a merely relative one, — one of psychological emphasis.

It has been urged that as regards religious objects we have a different case, and that here, at any rate, the unity is merely subjective. But this again is due to confusion in the use of terms. The unity of the religious content is no more subjective in the sense of being due to our apprehending it, to our understanding or appreciating it, than the unity of the scientific or esthetic object. The content of the religious experience is clearly organized. It points to a unity of its own, it fulfills a will. It is true that the belief in the objective reality of this unity involves an element of risk, not involved in the finite perceptual object, but this is another story and must be tested in its own way. The Homeric Zeus may have no objective existence, independent of our finite minds, yet he possesses, for all that, unity of content, independent of our individual apprehension.

It has been maintained, as against absolute idealism, that absolute truth is unattainable, and even some champions of absolute idealism have admitted this paradox. But in any case this objection cannot be aimed exclusively at absolute idealism. It would be as much of an objection against any other theory of the universe, for truth always aims at completeness. As a matter of fact such an objection is more dogmatic than real. We cannot say *a priori* that complete truth is unattainable. The play upon the phrase infinite truth is merely a rhetorical way of expressing our

aiming at complete truth. This is the implied end of all research, whether metaphysical or scientific.

To disprove the idealistic assumption of a completely organized truth by the counter assumption that there are independent parts of truth is merely begging the question. No one disputes that part-truths are true for a partial purpose. For ordinary purposes we can take $2+2=4$ as an independent system, ignoring its larger implications. But is there not implied, after all, a larger system—a constitution of number of which this equation is a part, and to which it owes its existence? And does not number in turn imply a certain constitution of thought? This again may imply a certain constitution of reality as a whole without *a priori* contradiction. Is not the separateness of the system $2+2=4$ due primarily to our limitations of attention?

So far, finally, as the question regarding the possibility of error is concerned, error implies at least a definite epistemological universe, whether this must be taken as existential or not. In a world of mere chance, error would be as meaningless as truth. Each implies certain postulates, a definite constitution. True, it is difficult, on the theory of absolute idealism, to understand the game of the universe, as a thinking animal, as a result of which our finite blindness and liability to error become a part of the scheme of the universe. But, on the other hand, it is not clear why partial knowledge would be more false on such a theory than with reference to any ideal of complete truth, whether now existing or to be progressively realized. The ontological existence of the ideal does not affect the problem of consistency. An ideal of truth, which insists upon the impossibility of truth, is the most irrational theory of all. Truth must believe in itself, in its possibility. And the

belief in complete truth implies a belief in the teleological unity of the universe, in some manner, and so postulates internal relations. In the meantime these ideals about the universe as a whole are over-beliefs, however important may be their regulative value. Practically we have truths — partial generalizations about our world. These eventually are taken up into larger systems, coördinated with larger masses of facts. And through these readjustments, the *significance* of the contents changes even though the part-contents, of which we have previously taken account, are retained as contents in this larger synthesis. The part-relations of earth and sun as indicated by ordinary perception still exist in the Copernican theory, but their significance — their truth — has been greatly altered in the larger correlation of experience. It is the *part-content* — the object aimed at — not the part-significance, which remains the same throughout the truth-process. Suppose a dog to undergo a surgical operation, such as having a tooth filled. To the dog the pain suggests nothing but violence and defence. To the dentist it suggests professional profit. To the owner, it means a happier and longer future for a pet dog. The dog's and the master's consciousness each have to do with the same presented content, but the significance is different. The dog's significance is false, while the master's is true. The situation here has only one true context, so far as that specific significance is concerned. And this may be true of every content. Theoretically, at any rate, the idealistic world presents no contradictions. The difficulties on which it founders, if it does founder, are difficulties of fact, not of *a priori* consistency.

While I cannot hold that there is anything contradictory in internal relations or in the conception of a significant

whole, I do not think it is proven that reality all together is such a whole. So far as we, finites, are concerned, it seems clear that some relations are of an external type, that is, that they are not grounded in the natures of their terms; but that they can be taken in other relations without prejudice to their character. Our abstract symbols can be taken over and over again, and so can any abstract relations, or qualities. Our serial time and space relations, our quantitative comparisons, our categories of likeness and difference do not, as subjective ways of taking our facts, in anywise alter the facts concerned. That you follow another man by the clock, that you happen to stand next him in the street, that you happen to have a similiar nose, that you happen to be a head taller — all this so far as we can see may be quite accidental to your own character. Any creature of logical definition can be taken over again in different contexts. One equation can be substituted for another: $2 + 2 = 3 + 1$ so far as the abstract requirements of quantity are concerned.

It is quite another matter, however, to say that all relations are external, that they are never grounded in their terms. Such a statement, in our finite experience, is at least as halting as the assumption that all relations are internal. Here we must, owing to our limitations, proceed pragmatically, and take experience at its face value. And while part of our experience seems to hang together, in this external and additive way, other parts again exhibit unmistakable evidence of the intimacy of purposive overlapping and interpenetration. Nor is this true merely of significant relations. Causal relations, too, imply certain natures on the part of the terms involved. Causality cannot be regarded as a mere accidental and external conjunc-

tion of indifferent facts, as Hume would have us believe. It depends not merely upon sequence, if such can be discerned, but primarily upon the *nature* of the processes involved. So much is this the case that Leibniz defined causality entirely in terms of the natures of the monads, and denied the efficacy of external relations.

Nor can we get around the problem of internal and external relations by insisting upon the diaphanous character of consciousness, for internal relations are as much content relations as are external, and so are not constituted by the individual's awareness of them. To be sure, internal relations, such as truth, imply mind for their existence, or at least the possibility of mind, for if the whole world should be asleep, this would destroy the reality of internal relations, unless there were an awakening to consciousness again. We do not, however, create the relations of geometry any more than the relations of the milky way by our awareness of them.

So far as our finite experience goes, therefore, we must take the Universe as in part implying internal relations or relations of teleological significance; in part as being capable of being taken in terms of external relations, or at any rate external to our finite and fragmentary purposes. So far as our cognitive interest is concerned, at least, the larger part of our universe seems to be unaffected, as regards its character, by our taking it. This is not true, however, even here, where our attitude influences the reality of the facts, as in those conditions which depend upon our volitional set. The advantage of pragmatism is that, in the largeness of our ignorance, we can take the universe as we find it and proceed from part to part by such fragmentary leadings as our finite thought is capable of. And

in our present incomplete state of knowledge, at any rate, the pluralistic way of taking reality has decided advantages. Objects, except in those limited cases which are altered by our will, seem indifferent or neutral so far as our cognitive attitude is concerned, whatever internal relations they may imply as regards their own content.

The controversy as regards relations involves fundamentally the whole conception of the relation of truth to reality, and with this we must deal more fully elsewhere. We must point out, however, here that truth is not foreign to reality, not an accidental addition to reality, not a mere tool of the will. Intelligence, we have seen, is not opposed to instinct or intuition: it is our instinctive, intuitive life made definite. Instinct is vague and inchoate, and requires memory and reason in order to do its work, to complete its insight, to reveal to itself what it means. Intelligence adds definiteness to instinct. Symbols, whether language or concrete imagery, are merely instruments in the service of thought, to attain to this definiteness of meaning and conduct. While instinct strives to realize itself at random, intelligence means realization in accordance with the specific character of the environment — the molding of our theory upon the anatomy of reality. Intelligence is rooted in the demands of instinct, and instinct becomes organized and significant in intelligence. It becomes realized. For truth is always of the real, bone of its bone, flesh of its flesh. It aims at specific reality, at individual fulfillment. It is positive, and not merely negative. It is identification and organization and not mere absence of doubt. In this identifying and conceptualizing, we must indeed select and omit, but what we select is content of reality.

The eternal and abstract essences, which have occupied

so prominent a place in the history of thought, have no existence in our world except as creatures of thought. We can abstract our geometric relations, our qualitative characters, our symbolic entities, and deal with them as such. Thus abstracted from the matrix of experience, they become indeed eternal and changeless, but they exist only within our abstract purposes. Materialistic and spirtualistic atoms alike are the result of this activity of abstraction. And since the facts of reality are themselves, as we find them, parts of the concrete world of interpenetrating and flowing processes, our atomic entities must be decomposed into prime atoms or qualities, or whatever aspect may interest the spectator in his attempt to describe and predict reality. But their indifference and independence exist only for the abstract purposes of the will, and in the service of its demands.

Does truth preëxist? Does thought find truth or create truth? To us it seems that thought creates truth, in the sense of a significant system, rather than finds it. Truth seems to be the outcome of thought's activity in tracing relations, in identifying constancies amidst the flux. But even from our finite point of view we must grant at least a preëxistent fitness for truth. Our world of objects and our categories of intelligence have evolved together; or rather the latter have evolved in the service of the former. The real world, therefore, cannot be wholly indifferent to our intellectual demands. There are not two sets of relations, existing in different worlds: the arbitrary relations forced upon the world by thought on the one hand and the unknowable relations existing in things on the other. But thought is at home in the world; is the outcome of its process; the revelation in part at least of its inner story.

Whether the story of the universe as a whole is itself a story of experience must be determined through the success of realizing our metaphysical and religious demands on that basis. We at any rate come about our universals *post rem* as extracted from the real world, whether they exist *ante rem* or not.

CHAPTER VII

The Postulates of Truth

The pragmatic movement has emphasized practically altogether the *function* of truth in relation to life as a whole. The function of truth is to regulate conduct; and truth, therefore, is valid when it flows into its anticipated consequences. These consequences are further experiences. Epistemologically truth rests on experience; and experience, as one moment of individual consciousness, rests on more experience, the present moment becoming confluent with the new moments in the ever expanding restless stream. The flow of this stream has its direction determined by the past and present tendencies, but it also has its own individuality, as the old elements flow into the new situations, whether chemical or psychological.

What should be made clear, however, is that pragmatism is a theory of the function of truth, and does not deal with the whole problem. By emphasizing this we may be able to attract attention to the far larger and more complicated problem of the form of truth. To be sure, even in dealing with the problem of function, pragmatism has been inclined to limit itself to the biological function of truth — truth as a factor in the adjustment to the perceptual environment, or a tool for dealing with perceptual situations. Pragmatism has been inclined to neglect the sporting interest in truth — truth as setting its own problems, choosing its own constitution, and thus elaborating its logical consequences

to harmonize with its posited world. But this, while it alters our conception of the scope of truth, does not fundamentally alter our conception of its function, which still remains to regulate conduct — the conduct of the understanding as well as the adaptation to a perceptual environment.

But granting that thought comes to light in the stress and strain of experience — whether forced upon us by the environment or posited as the logical play-ground of the will — there remains the problem of the nature of thought itself. Is the form of thought originated by the practical situation — the consciousness of difficulty or disorganization out of which it arises? In the case of generating electricity by friction, say by two sticks of wood, we are setting free a preëxistent energy, the nature of which we must respect; and the friction simply furnishes a condition for its manifestation. Is it so with thought? Or is thought created outright by doubt? Does it really grow out of the infra-logical antecedents? In that case, is the form, too — the laws of thought — created? Are they set by the will as its temporal conventions, or must they be acknowledged by the will as eternal? In the former case, are they just what the *individual* posits them as being, or are they universal? But, if without conventional agreement we find ourselves acknowledging these laws whenever we think, they would seem to be independent of the will and have a preëxistent character. In Plato's terminology, they would seem to be "recollected" rather than created in our coming to consciousness of them. The laws of thought would seem to be *discovered* through their use in experience, rather than *made*.

If we look forward to the end of thought, instead of

backward to its origin, is thought simply a tool to an alogical end? Or does thought enter into the end of life as an intrinsic factor — not as a scaffolding merely for a higher stage of mystic immediacy or biological activity, but as the law of the process of life? What relation does thought, with its postulate, bear to life as a whole? Such, and many other questions, still remain, after we have agreed upon the regulative function of thought in experience. To ignore the structural aspect of thought means a very invertebrate theory of knowledge.

One thing is certain, that the teleological value of thought cannot be understood apart from its correctness, its technique. The syllogism, with its rules, is a valuable machine for abstracting and investigating valid thought relations, in spite of the contumely heaped upon it. What is true of the syllogism, as a device for ascertaining formal relations, is true likewise of the so-called inductive canons for ascertaining causal relations amongst facts. The practicality of our thinking about perceptual situations lies in its being correct thinking, and Mill's canons are an important device for such procedure. If it is true that the procedure explains the value of the device, it is also true that the procedure is made possible by its being a correct device.

Are these rules arbitrary? The rules of athletics are not arbitrary, though they may seem so to the spectator. They are the result of studying the laws governing both the constitution of the players and the appreciation of the spectators, so as to produce, on the whole, the best result for player and spectator alike. The conditions governing the game may be said to preëxist in human nature and to be binding if you choose to play the game and to play it effectively. So with the laws of thought. The question, then, arises:

What are those laws of thought which in all our reflective procedure we must respect? And what is the basis of their authority? To begin with the first question: What postulates are implied in all thinking and condition its procedure?

I shall try to show that there are four presuppositions or laws which are implied in all our knowing, viz.: the law of consistency; the law of totality; the subject-object form, or the law that knowledge must be representative; and the law of finitude. The use of these terms will become clear, I trust, in the discussion.

1. *The Law of Consistency*

First of all it will be generally agreed that we presuppose consistency. Under the law of consistency I include what are usually termed two laws — the law of identity and the law of contradiction. It requires no proof to show that these are merely different emphases of the same meaning. If we use the old formula, *A* is *A*, to symbolize the so-called law of identity, the law of contradiction simply brings out the implication that if *A* must be taken as *A*, if black must be taken as black and Socrates as Socrates, throughout the logical procedure, *A* cannot also be taken in the same sense as not-*A*. This is true, but it is an implication rather than an independent law. Fortunately, the concept of consistency comprises both of these implications, viz.: that for purposes of thought we must be able to take *A* as *A*, and that if we must thus take it, we cannot take it as not-*A*.

But the term consistency has a further advantage. It not only comprehends both of the old formulas, but it also brings out what they failed to do, namely, that it is identity within a variety of individuals and changes with which we are concerned. Truth would be meaningless within an

abstract world in which A is bare A. It is the constancy of A, as making possible description and prediction, that makes truth mean something. The law of consistency means that in the variety of experienced facts and changes, there must be a certain constancy of content, if we are to make any predicates about our world. Unless we can take our abstract meanings, qualities, relations, or whatever we may be actively interested in, as the same, in spite of flux, we can make no judgments or inferences. This means, formally expressed, that we must take A as A throughout our logical procedure, and that we cannot take A as not-A, if we would reason about the meanings or things of our experience. This implies that, for logical purposes at least, there are such recognizable identities as furnish leadings or threads to the plurality and flux of experience.

Identity in the variety of situations, empirical or formal, must always be taken as identity for a purpose, in order to be concerned with truth. Mere repetition *per se* would have no significance for truth. Animals, too, have to adjust themselves to a world of uniformities; and they develop instincts and habits, but no truth. It must be identity as leading to identification; and this means that the situations may, in other respects, be quite diverse. In fact, here lies the significance of the identification — in taking the somehow different as identical for the purpose. $4 = 2 + 2$ for the purpose. The Jones of to-day, however outwardly changed from the Jones of your school-days, is still the same in fundamental characteristics, and merits the same loyalty and friendship.

We can see that nominalism, in the bald sense of absolute disparateness, would make truth impossible. In such a world there could be no concepts and no inference, as each

particular content must be taken as unique. Nor is it necessary to go to the opposite extreme, and speak of universals or identities as existing prior to the instances, and these as differentiations of this identity, as even Bosanquet does. This makes knowledge quite as impossible as does pure nominalism, for it is absurd to suppose that from identity any instances could be differentiated. It is enough for truth that certain characteristics can be taken as the same in various individuals or groups, and that this makes it possible to say something about the conduct of these individuals or groups so far as these characteristics are concerned.

Nor is a purely dynamic nominalism any more possible. To be sure, truth deals with a world of change. But change need not be chance or absolute discontinuity of process. In so far as such is the case, truth of course is impossible. Change may be circular, or practically so; and it is a world with a certain uniformity of characteristics, however much it may change, with which truth must deal. It is only in so far as our world of experience can be taken as constant, that we can have science, though of course such a statement would be meaningless if we did not deal with a world of change.

The law of consistency always has to do with meanings. The meanings may be abstract or hypothetical merely, and our interest may be in their formal relations. Or the meanings may refer to qualities and relations in concrete experience, and so may be concerned with existence. But in any case the law of consistency refers to the identity of meaning, and holds that, from an identical content, identical consequences must follow; so that if certain consequences follow from M in the case of P, the same consequences must follow from M in the case of S.

The law of consistency applied to the concrete meanings of experience — qualities, relations, or whatever they may be — means that you cannot take the same *fact* as *A* and not-*A*. A thing cannot be taken as having the quality of *A* and the quality of not-*A*, white and not-white, in the same respect. It does not deal with the question whether a thing *can have* the quality *A* and not-*A* in the same respect. The law of identity is forced upon us irrespective of the object, though inasmuch as reality is for us what it must be taken as, in the procedure of experience, we naturally extend the law of our thinking to things as well. In this there can be no harm, if we know what we are doing and are not postulating some occult harmony to cover up our previous dualism of thought and things, created by our own assumptions. One thing is certain, the world of experienced things is to some extent describable, and so must have some degree of identity.

That *A* is not not-*A*, that sour is not sweet or any other quality within the universe of taste, involves no contradiction. They can still hang together within one system. In fact there can be no system, if there is not difference. Being and not-being, as pure abstractions, do not imply each other. They are exclusive. But as pure abstractions they are also indistinguishable. They can have meaning only within a context. And when we really develop their meaning, instead of bandying terms, we find that they hang together by their edges — that we cannot define one without implying the other within a system of meaning which posits them as aspects of itself. Bradley would argue that, since *A* cannot possibly be not-*A*, therefore they cannot be related in any manner. For suppose they were like in any way. Then in so far they must be

identical or partake of a common term. This leads to an infinite regress. But what is this but playing with terms? Of course, if *A* and not-*A* be made exclusive by definition, they cannot belong together. But that does not prevent our actual *A* and *B*, as experienced, from belonging together within a system, though perhaps not always one of logical implication, as Hegel thought. Experience is not chopped up with a hatchet, not made up of isolated abstractions. As immediate, the qualities of experience are unique. But as immediate they are neither here nor there, neither this nor that, neither more nor less — not truth. It is because these facts are capable of being sorted into series and classes, on the basis of degree or kind, that we have science. And this distinguishing of degrees or kinds, identities or differences in the world of individual facts, does not seem to disrupt. It contradicts neither their existential nor their appreciative unity.

Two aspects are involved in the concept of consistency, as I am using it: First, that terms must have an identical meaning, must be taken as the same throughout the argument. Otherwise we shall not be talking about the same thing, and so shall be guilty of the fallacy of four terms. This use of the term consistency is closely bound up with the other aspect: namely, that from identical characteristics follow identical consequences, whether we deal with relations or qualities, or whatever the selected content may be, and whether the individual facts be the same, or we be dealing with new groups of facts. A case of this would be Euclid's postulate: "Things equal to the same thing are equal to each other." Stated in a more generic form: If any individuals or groups of individuals are identical in some respect, they can be exchanged so far as that charac-

teristic is concerned. This is equally involved in deductive and inductive inferences. What we must be careful about in each case is to isolate or distribute the identity, to see not merely that there is identity in the situations dealt with, but that it is significant or relevant identity — identity in the same respect, *i.e.*, that it pertains to the consequences which we try to deduce. This is reduced to a technique in the syllogism by rules such as, the middle term must be distributed at least once, no term must be distributed in the conclusion which is not distributed in the premises, there must not be more than three terms, and both premises cannot be particular or negative. As regards causal relations the technique of discovering this identity has been systematized in Mill's canons, the ideal of which is the method of difference, which means precisely a distributed identity. We thus proceed to sort our facts into classes and series with determinate characteristics and predictability. The success may be varied, and even with cumulative coöperation and specialization, must necessarily be slow, considering the complexity of our world. Sometimes the result of scientific investigation is simplification of hypothesis, as in reducing magnetism and light to electricity. Again, new and unforeseen data come to our ken, necessitating fresh assorting, as in the recent discovery of the radioactive elements. But the progress of science, physical and psychological, is evidence to how great an extent the world of our experience lends itself to conceptual manipulation.

A great deal has been said justly against substituting mere analogy for proof, as the human mind in its laziness so often does. This must not blind us to the fact, however, that we must proceed by analogy — the seeming identity in the new set of facts with situations that we

have tabulated and learned to meet in past experience. Newton's theory of gravitation, Darwin's theory of the origin of species, are splendid instances of framing hypotheses on the basis of analogy and with successful outcome. We must be careful, however, to make certain, by observation and experiment, that the likeness is *relevant* likeness — that the consequences which we try to predict follow from the identical characters which we have selected. Two men may be identical in being tall or black or Italian, but it does not follow that you can predict from one to the other as regards reliability, though that is the way we often implicitly proceed.

As the law of consistency means that an object of experience must be taken as the same (quality or relation) in the same respect; or, expressing it negatively, that an object cannot have different predicates in the same respect. This will be seen to include what Lotze has called "the disjunctive law of thought," a species of which, in the case of only two alternatives, would be the so-called law of excluded middle. To use a concrete instance: A rose *a priori* may be qualified by any one of a number of colors, but as a matter of fact it can be taken only as having one color in the same respect. And if it possesses one, for example, red, it cannot possess any of the other colors at that point. Whether you artificially dichotomize your universe of color as red and not-red for the purpose, or state the actual disjunction of alternatives possible, the result is the same. An object cannot both be taken as having a quality and as having a different quality in the same respect. The "disjunctive law" is hardly even a corollary. It is rather the explicit statement of the law of consistency, as previously used.

If the traditional laws must be regarded as different emphases at most of the same principle, they have their meaning, nevertheless, as psychological stages in making explicit the law of consistency. From this point of view the consciousness that *A* must be taken as *A*, in a universe of discourse, is less distinct than the consciousness that *A* cannot be taken as not-*A*. But the full significance of the law of consistency is expressed in the "disjunctive law," viz., that our universe of discourse must be capable of such disjunction that *A* can be distinguished from *B* and every other possible predicate in the same respect — only one of which can be taken as qualifying the subject and thus be predicated in distinction from the rest.

As corollaries or implications of the law of consistency, we would have the axiom that what can be predicated, whether affirmed or denied, of a kind can also be predicated of that kind's kind, which is so vital in all our deductive procedure. And also that what is true of one group of facts is true of another group, if the practical consequences follow from characteristics which the groups have in common. And thus we can extend our knowledge by analogy to new cases and test its application there.

2. *The Law of Totality*

But though we are able thus to establish kinds or systems of fact, with their definite connections and predictability *in suo genere*, the question still remains whether these systems cohere into a whole, hang together as kinds, or whether perhaps our world is made up of disparate or parallel systems, whether two or infinite in number. Now to be knowable it will be seen that somehow the various systems must hang together at least with our cognitive

purposes. We must have systematic connection in the large (*in dem Grossen*), as well as unique determination within the one kind of series (*in dem Kleinen*). Taking number as one illustration, not only must the various series, finite and transfinite, be self-consistent, but we also demand that they shall form a complete whole. Now this postulate of systematic connection in the large, I would call the law of totality.

This is broader than Leibniz's law of sufficient reason: Nothing happens without a reason why it should be so rather than otherwise. The law of totality does not emphasize teleological connection as over against causal, as has generally been the use of the law of sufficient reason. It merely emphasizes that facts do not exist as isolated individuals or isolated groups in our experience, but belong with other facts; that reality, as we know it, hangs together by its edges, so that we can pass from one fact to another, either directly or by intermediaries; and that only so can we know it. It does not mean that every fact makes a difference to every other; that our fancies alter our gravitational relations to the Milky Way. This would be impossible to show. On the contrary, we know that some facts seem to make no direct difference to a given group of other facts; and some make a certain kind of difference only under certain conditions of intensity or complexity. It makes no difference to a color in what part of a space or time series it is located, whether perceived yesterday or to-day, here or in China, given the same concrete setting. But the number of vibrations per second do make a difference. Even here, however, on account of the structural conditions, a certain intensity of vibration is required to perceive light at all, and a certain number of vibrations

per second must be added to perceive another kind of light. Experience, as we can take account of it, does not proceed by infinitesimal transitions, but by finite drops or bucket fulls. The law means that facts possess such uniformities or similarities that we can pass from one to another, under determinate conditions, if not immediately, through a series of intermediaries. If my thought does not directly affect other bodies in space, it may do so indirectly through the difference it makes to my own body. But, by some edges, some common attribute, all the parts of our world hang together. Mind must make a difference, under determinate conditions, to mind, and body to body, and mind to body and body to mind, in so far as they are parts of our experience and known by our experience.

The constitution of the human mind makes the causal category a pervasive one. To know our world means that its various objects can make a difference either directly or indirectly to our minds. This, in the case of the physical world, means a causal difference. To speak of physical changes as parallel to thought would mean that the mind can take account of objective existences that make no difference to it, which is absurd. That our ideally posited world of objects makes a difference to our purposes requires no elucidation. Thus widely interpreted, the law of totality means that the world with which knowledge is concerned cannot exist in compartments. It is a command to look for connection. In a certain sense it may be taken as equivalent to Spinoza's conception of substance, without assuming *a priori* that "the order and connection of ideas is the same as the order and connection of things." We have to do here only with things as experienced. We might, however, agree to Spinoza's axiom that "things which

have nothing in common cannot be understood, the one by means of the other; the conception of one does not involve the conception of the other "— meaning by "in common" merely that the things must be capable of making a difference to each other under certain conditions, and especially, directly or indirectly, to our cognitive purposes. We cannot know universes split off from our own, if such were existentially possible.

In spite, however, of Spinoza's insistence upon the unity of the one substance, he left us two disparate parallel systems which can make no difference to each other, have no common attribute — the world of thought and the world of extension. Our concern here is not with the metaphysical possibility of such a conception. But for epistemological purposes, we must assume not merely that the universe can be sorted into kinds, but that these kinds somehow hang together, that one part of our experience coheres with another part, either directly or by means of intermediaries. Only in such a world would social objects be possible. Facts thus have not merely a unique determination within their own special system, but have a universal reference, cohering as a whole. And this is what I mean by the law of totality.

And how do they cohere? I can conceive of only two ways: either as cause and effect, or as means within a purpose, logical, ethical, or esthetic. And it is not necessary for epistemological purposes, whether it is for metaphysical or not, to reduce these to one. It is not enough that facts are together in one space and one time. They might be thus together and yet exist in compartments. Space and time do not unify. On the contrary the same presupposition of totality applies to our space and time systems.

We assume the unity of space on the basis of the law of totality, *i.e.*, because we believe that our universe of facts, spread out in space, hangs together. And so with the unity of our social time construction or history. Empirically we do come upon functionally dissociated time series in experience, as in automatic writing and trance, but they are cognitive realities only when connection is established for some subject. Facts must run into each other some way, causally or teleologically, to make the unity required for cognitive purposes. And as all teleological unities are also psychological events, therefore all facts must in the last analysis be causally conceived, according to some definite relationship, as objects of knowledge.

Nor does the law of totality mean merely that the facts of experience are a collection of such a kind that we can use connective symbols as *and* or *with* or *on*, etc.; not merely that we are conscious of the facts together, which we are only to a small extent, but that facts make a difference to some other facts, become confluent with some other parts of experience, in a systematic way. If knowable, they are not merely lumped as *ands* and *withs*, but strung with identities which we can disentangle either causally or teleologically. This we postulate at the very outset of logical investigation. Only in this way are consequences predictable, formally or materially. Whether the laws of thought are coërcive over things or not, they hold for our experience of things, actual and possible. And that is all that is logically important. The form of experience at any rate is predetermined.

Because we must assume that facts, in order to be known, must be capable of making a difference to other facts and so, either mediately or immediately, to our powers of know-

ing, it does not follow that we must assume that facts, in advance of being known, must be strung on the unity of thought. Facts in order to become *known* must be strung upon our hypotheses, become a part of our purposes, but that does not prove that they can only *exist* as thus strung. It is through such stringing that facts come to have their *significance* for our human experience, but that does not prove that they then begin to *exist* or that thus they must exist in a larger mind. Facts satisfy the law of totality when they are capable of making some difference to our purposes under definable conditions. This is quite different from holding that, because we can string things on our unity of apperception, therefore they must already be part of a transcendental unity of thought.

3. *The Law of Duality, or the Presupposition of the Subject-object Relation*

This is involved in all thinking; and the attempt to state the subject as object or vice versa, for thought purposes, gives rise to a paradoxical infinite which is not a progress toward a limit, but which simply means that you cannot transcend the subject-object relation while you remain within the concept of thought. This paradoxical answer resembles the one you get in number when you ask what number is less than the least conceivable fraction. To which the answer is: zero, which is not a number at all, and so beyond the series of fractions. The difference is that the conception of an infinite series in the case of number has a warrant in the progress toward a limit, which is not the case in the subject-object relation. Here nothing is gained by the repetition, once you have grasped the law that in every judgment, including the reflection upon itself,

the subject-object relation is involved. You do not get a thought, at infinity, which is neither subject nor object.

A good deal has been said about the self-representative character of thought and its supposedly implied infinite. Now, it is quite true that the proposition, no subject without an object, as a law of thought, must be self-applicable, *i.e.*, the judgment, as regards the subject-object relation of thought, itself involves the subject-object relation. Like all true presuppositions of thought, the subject-object presupposition is circular. Thought activity always means the discovery of the relation of a selected content to a system; and to this the reflection upon the subject-object character is no exception. We simply become conscious of the fact that the self-representative judgment is an instance of the universally representative character of thought and differs in no wise, so far as the application of this law is concerned, from any other judgment.

Now, thanks to language, this representative statement, whether self-representative or other-representative, can be repeated upon itself to infinity. And this, no doubt, has its own value as a logical sport, whether in the philosophy of number or in other speculations; but it does not in anywise clarify the nature of thought. For purposes of epistemology, the self-representative character of thought simply means that the subject-object relation as a presupposition of thought is self-applicable. It certainly does not prove that truth is an infinite series.

Neither does the universality of the subject-object relation in all our *thinking* prove that it must hold universally for *existence;* that because we cannot *think* an object without a subject, therefore all thinkable *reality* must be involved in the circle of this subject-object relation; ergo: all reality

must be a spiritual or reflective unity. This has been a favorite argument for idealism and is certainly a short cut. But is it valid? We must remember that the subject-object presupposition only holds for our *thinking* of reality. It can only be a presupposition therefore for reality which thinks. Our reflecting upon the stone does not necessarily make the stone reflective, and so does not necessarily sweep the real stone within the subject-object circle of our thought, in the sense of its existence being conditioned by its being known. What parts of reality think and what do not think must be decided upon evidence, and not by any *a priori* epistemological presuppositions. All we can show is that these must hold for *thinking beings*, that they are presupposed in our thinking, and that our denial of them affirms them. But we cannot show *a priori* what beings *are* thinking beings or that the universe as a whole is a thinking animal.

The relation of the referent to the referatum, of subject and object, in the judgment relation of the living thought process is different from the reference within a logical context, taken as abstracted from the real subject. This has often been lost sight of in the definition of the judgment. The meaning of the proposition, however complex its internal organization may be, only figures as a judgment, when it is taken up into the active thought context at the time. This active context of interest is the real subject or referent; the proposition or ready-made judgment, as taken that the [illegible] in formal logic, is in this relation the referatum. number has a[illegible]sition as interpreted by the cognitive moment, is not the case in[illegible]on as the vehicle of the active meaning at is gained by the r[illegible]mbol of the judgment. The cold-storage that in every judgm[illegible]udgment, but is now merely an object

of thought, comparable to any other object, such as gravitational relations in space.

4. *The Law of Finitude*

So far from thought being infinite in character, I shall try to show that thought or truth must always be finite. We have seen that thought is in nature relational; that it universally means the active selecting and assimilating of a datum by an apperceptive system which does the selecting and relating. Now both the content selected and the system within which it is to be related or defined must be finite in character. We must generalize from certain clear and distinct finite characteristics. I will use geometry, a purely formal science, to make my point clear. I quote from Russell regarding the determination of points and their relations: "Any two points determine a unique figure, called a straight line, and three in general determine a figure, the plane. Any four determine a corresponding figure of three dimensions, and for aught that appears to the contrary the same may be true of any number of points. But this process comes to an end, sooner or later, with some number of points which determine the whole of space. For if this were not the case, no number of relations of a point to a collection of given points could ever determine its relation to fresh points, and geometry would be impossible."[1] And again in speaking of dimensions: "The number of relations required must be finite, since an infinite number of dimensions would be practically impossible to determine."[2]

This law of finitude has been generalized for the whole field of mathematical science by so great a mathematician

[1] "Foundations of Geometry," p. 132.
[2] *Ibid.*, p. 161.

as D. Hilbert: "When we are engaged in investigating the foundations of a science, we must set up a system of axioms, which contains an exact and complete description of the relations subsisting between the elementary ideas of that science. The axioms so set up are at the same time the definitions of those elementary ideas; and no statement within the realm of the science whose foundation we are testing is held to be correct, unless it can be deduced from those axioms by a finite number of logical steps."[1]

That we always base our concepts or laws upon the examination of finite facts and their finite relations was definitely recognized by Aristotle: "If the kinds of causes had been infinite in number, then also knowledge would have been impossible; for we think we know, only when we have ascertained all the causes, but that which is infinite by addition cannot be gone through in finite time."[2] And in the same connection he shows that even if there existed an infinite, the concept of the infinite could not be infinite. For the same reason both Plato and Aristotle recognized that there could be no truth of absolute flux or absolute chance. It is only flux that repeats itself under describable conditions, variety with finite characteristics, that can be reduced to science.

To be sure the law may repeat itself in an endless number of instances; there may be no last term in the series. Such series abound in mathematics. But, in such cases, it is not the potential infinity of the steps which constitutes knowledge. Clearly, a generalization from enumeration would be a contradiction, if we assume infinite instances.

[1] Translation by Dr. Mary Winston Newson in the *Bulletin of the American Mathematical Society*, July, 1902.

[2] End of Ch. II, Bk. II, "Metaphysics," translation by Ross.

The concept of the series is based upon the fact that the steps repeat themselves according to certain finite characteristics or laws. It is this, the identical or universal element, with which truth is concerned, not with the repetition. In fact, once the law of the series has been discovered, the repetition becomes useless. You can then take the series as completed. There would be no virtue in repeating the series, $1 + \frac{1}{2} + \frac{1}{4}$, etc., after discovering its limiting term or its sum, whichever you may be interested in. An infinite number is contradictory, because $n + 1$ is the nature of number. This law is based upon the number process as actually observed. The unpredictable character of number, outside of its general law, is well known, because in each case we must proceed by induction from individual instances and observe their relations.

The infinite, in the case of thought, arises from not recognizing the presuppositions of thought; for example, subject and object. The infinite reflective series does not solve the problem. It can only bring the presupposition involved to light. The infinite cannot then be regarded as of the nature of thought. It is merely a result of reflecting upon the nature of a reflective system. It is posited by thought as its logical sport. It has nothing to do with the laws or validity of thought. It shows that thought is dependent upon the larger will which sets the game. Knowing knowledge does not mean that we must know in advance of knowledge, but that we must analyze the presuppositions of knowledge. It is the circular character of the presuppositions of truth, looked at as abstract truth, that gives rise to the apparent infinity of truth. But the infinity is only apparent. That the law of identity or any other *a priori* postulate is epistemologically circular is as clear at the outset as it would be

after endless repetitions. We need only become conscious of its *a priori* character as a presupposition of truth. To be sure, it applies to itself as a proposition and to the reflection upon this application, etc., but nothing is gained by such a repetition. It is a disease of language.

The infinity of Plato's Parmenides and of Bradley is a paradox created by definition — by taking thought as abstractions, mutually exclusive, and then attempting to bring them together. In the infinite of the Parmenides, for example, you have no true limit, though there is no end to the series. If terms are like, they must partake of or belong to the idea of absolute likeness; but in this case the term must be like the idea and the idea like the term; and this likeness must be due to their partaking in an idea of likeness and so on to infinity. Otherness would do as well as likeness. In fact any relation, taken as an abstraction, will illustrate how contradictory it becomes. Thus the one shows itself other than the other, etc. In Bradley, you have a similar infinite as regards qualities and relations. Here, too, there is no limit or progress in the series. If you start with disparate, independent qualities, then any relation which tries to relate them must have something in common with each of the terms; in that case it disrupts and must in turn be related, etc., *ad infinitum*.[1] But the infinite repetition offers no solution. It simply shows that such a definition of qualities makes relations impossible, which ought to be clear at the outset.

In order to apply the conception of the infinite to knowledge in a significant way, it is necessary not only to show that, so far as knowledge is concerned, the dualism of subject and object, of system and datum, is insuperable and,

[1] For a recent statement of Mr. Bradley's position, see *Mind*, October, 1909, p. 494 ff.

therefore, that no finite steps can solve it, but it is necessary to show that there is progress toward a limit and what this limit is. Now, in knowledge, the datum to be organized may be considered as capable of greater and greater systematization, and thus growing smaller as outstanding raw material. But this does not prove that knowledge is infinite. Further, it is true that the limit of the thought process, its *rationale*, cannot be reached on the level of thought, for though all other data were organized, all other problems solved — set by the nature of the content or by the free play of thought — when the last surd has yielded up its enigma to the progressive system of knowledge, there remains the problem of thought itself. Thought makes itself the pure content of its own reflections. And here it discovers a limit beyond itself. For thought cannot answer the question: 'why thought?' Or why does thought have this constitution and no other? Why this search for wholeness? Or stating it in relational terms: Granting that we may be able to weave our relations into ever larger and more comprehensive relations, the minor classes into still larger classes, how can we define a system of relations which is not in turn relative to a larger system, a class which is not itself a class? Here you come upon a limit of the process, which like the number zero or the zero of quantity lies outside the process itself, viz., in the purposive will which chooses to realize itself in this way, chooses this form of activity — the will to think. But there is nothing to show that this zero lies at infinity. It is rather the purpose within which thought moves, the end for which it exists. Thought has reached the Canaan of its progress. But, like Moses of old, it cannot enter. This is the land of faith.

CHAPTER VIII

The Postulates of Truth Continued

In this chapter I wish to discuss some proofs of the suggested postulates. I also want to show their place in the game of the will, and, at the end, offer some cautions as against some present tendencies. But after the long discussion of the last chapter, it may be well, lest we forget, to restate first of all the fundamental presuppositions of thought as I understand them.

By the law of consistency, I understand that our experience of reality, whether we regard it from the point of view of meanings or of the objects intended, must possess such identities that we can take contents over again and so conceptualize our world, whether taken as individuals or as groups of individuals. Thus we can prepare for the future. It follows, of course, that if we must thus take experience, we cannot take it otherwise in the same respect, and also that we must be thorough in our sorting, if we would have accurate prediction, *i.e.*, our contents must be disjunctively arranged. By the law of totality, I mean that these concepts or attributes, these part definitions of our world, must be seen to hang together. The parts of reality must make such differences to each other, directly or indirectly, as to constitute a dynamic whole. Atomism and parallelism, with their hydra-headed forms, make the ideal of knowledge impossible at the very outset. Our thoughts

must belong with things and things with each other in a dynamic context in order for science to be worth while.

By the subject-object law, or the law of duality, I mean that thought presupposes the unique relation of an active or volitional referent, a prospective system of meanings, on the one hand, and a specific object, the referatum, which is selected by this cognitive purpose, on the other. The subject-object relation is distinct from other functional relations of referent and referatum through the volitional character of the referent. It is alive, it glows with interest. All other systems of relations, whatever their specific meaning may be, must be referred to this living subject in order to have systematic value. By thought being 'representative' I mean only that the object, for purposes of truth, must be taken over into this systematic context of active experience. This is what happens in the process of judgment, the simplest form of which is symbolized in the proposition. The complete truth would be a systematic, personal experience — the fulfillment of our living formal demands. Such an ideal is Hegel's absolute, which must be held valid as an epistemological ideal, whatever may be its claim to ontological existence. This claim I do not think it is the province of epistemology to settle.

By the law of finitude, I understand that an object, in order to be known, must be capable of being described or identified by a finite number of marks or rules. This is true even of the concept of the infinite, which I agree is hypothetically possible. The infinite series is defined, however, not by an enumeration of its instances, which is impossible, but by a finite rule or law. In truth, as in our other ideals, we demand realization or completeness; and this is possible only if the object, however infinite in its

instances, submits to a finite law. If the universe itself is an infinite process with creative novelty, then truth is only in part realizable. That the universe is such is not a case for dogmatic assumption, but to be proven as other hypotheses are proven. As a universe of absolute chance would make truth impossible, the attempt to *prove* the existence of such a universe would be contradictory.

The law of finitude does not contradict the ideal of the completeness of truth. If the absolute should prove to be a valid metaphysical hypothesis, we must suppose that the canons which hold of our search for truth hold likewise for the absolute experience, including the law of finitude. For suppose that the absolute, instead of generalizing from finite relations, sees truth in terms of infinite relations, then our truth would bear no ratio to the absolute. With all our efforts at generalization, we should never approximate any nearer. Our research would be futile and irrelevant, and we should land in the dismal abyss of agnosticism as to even the problematic nature of truth, which of course must involve the existence and character of the absolute itself. In other words, truth would have entered upon the self-contradictory task of attempting to define the (by hypothesis) undefinable. In so far as we think of an absolute truth, we must think it as the completion of our demands, not as a violation of them.

I

Coming now to the tests of our postulates, two tests have been proposed: (*a*) Do these laws presuppose themselves? (*b*) Are they presupposed by their own denial? (*a*) Do they presuppose themselves? Take the law of consistency — could we deal with the *meaning* of consistency unless

we could take it as the same? Clearly not, as this is the only way in which we can define it or deal with it logically. If you take again the law of totality, here presupposing itself would mean that as a proposition it coheres with other propositions of experience, thus indicating a systematic whole. And this is certainly assumed. It is also evident that these laws presuppose each other. The law of totality must have a consistent meaning, and the law of consistency must cohere with other propositions into a systematic whole. And this holds of the other postulates. So again with the subject-object relation. This is implied in itself. The judgment about the subject-object relation itself presupposes the subject-object relation. So do the propositions concerning consistency and totality. Likewise must the proposition of finitude be self-applicable and applicable to the other postulates, including the propositions regarding identity, totality and the subject-object form.

If you take again the second test, viz., that they must be presupposed by their own denial, this, too, is met by these laws. You cannot deny the law of consistency, and still have the proposition of consistency. You must define what you mean and stick to it for the purpose of the argument. Again, you cannot deny the wholeness of human experience, the unity of our world of thought, because in that case you would make social understanding impossible; and presumably you argue to be understood. It is not necessary to stop to show that each presupposition holds for the other — that the denial of consistency, in regard to the proposition of totality, must imply it, and that the denial of the unity, or social character of our world, implies it, when you try to argue consistency. A denial again of the subject-object relation clearly presupposes it, for the

judgment of denial itself takes the subject-object form. And if you deny the law of finitude, you imply it, for the law of finitude means that you presuppose finite relations, and it can be shown that in denying the law of finitude, your judgment, as a matter of fact, involves finite relations.

But it seems to me that only the argument, which proves that you cannot think at all without implying these postulates, establishes a universal for their epistemological necessity. This you cannot get by showing that they are actually implied in any given judgments, for these are not exhaustive. The affirmative implication would only give you a particular result, not a universal. To establish a universal you must show, not only that the judgment selected implies the presuppositions in question, but that you cannot think, make any judgment whatsoever, without presupposing these postulates. That you show that they are as a matter of fact implied in their own propositional statement, and that their denial implies them in the case of their own statement, would only prove a particular application. It is no more significant that they imply themselves or that their denial presupposes them in their own statement than to suppose that such is the case in regard to some other proposition. It would not prove that they must hold in the case of all propositions.

To make them universal, we can do one of two things. We can assume them as conventions or we can show that, in the actual social procedure of thought, there can be no negative instance without making truth impossible, which would show that they must hold for all cases of truth. In the former case we can meet with no negative instance, because we have by definition forestalled any such instance, just as, when we posit a space of zero curvature, we can-

not, for the purpose, meet with a case which is not of that character. But as thought is an actual constitution, we are not at liberty to posit at will. Rather, as in the case of number, must we discover what the ideal constitution of thought is. The second method, therefore, is the one we must choose. And here we must show, not only that the law holds in a particular instance, as in the case of its own statement, but that there can be no instance in which it does not hold.

Now suppose any instance, *n*, in which the law in question does not hold. Take the law of consistency. Then in such a case truth is impossible. For in order for truth to be possible, it will be seen that we must be able to take our meaning as the same. Otherwise there can be no definition or argument. So in regard to any of the other laws. And the consciousness that there can be no truth, if the law does not hold, makes explicit the law. If it is objected that this is a circular process and not a proof, I would entirely agree. The process, however, brings out the implication, shows us the already implied necessity of the postulates for all our thinking. And this making explicit what is implicit is all the demonstration of which the presuppositions of thought are capable.

But does this mean that these presuppositions are also ontologically necessary? That they require no proof as regards their real validity, in the actual procedure of experience? Our ability to acquire knowledge, to meet our world of facts on such a basis, must here be the guarantee and the only guarantee. And every partial success makes the law in so far valid, though a complete success alone could be a complete vindication. If truth is found to be actually possible, then, in so far, the presuppositions are onto-

logically valid. The mere assumption of ideality, totality, subject-object or finitude does not make them existentially valid. If we are to know, they must hold for our universe as experienced. While they are *a priori* and necessary postulates from the point of view of formal knowledge, from the point of view of reality they must be treated as hypotheses to be verified in the procedure of experience. It is not inconceivable that a world should exist in which the postulates of consistency, totality, subject-object and finitude would have no applicability. But it is also true that in such a world truth would be impossible. In this there is no contradiction, since it is from the point of view of a universe where truth is admittedly possible that we make the judgment of the impossibility of truth in a world where its presuppositions do not hold. If you argue truth, you of course presuppose the possibility of truth. The best refutation of the skeptic who denies that there is agreement, etc., is the method of Socrates that we do understand each other. If there are wholly disparate worlds, they at least do not concern us. If the above postulates are formally true, you can easily conceive a world in which truth is not possible by dropping one or more of the postulates.

But there can be no *a priori* valid metaphysical postulates. The only possible ontological necessities are the necessities of facts — of the conditions which we must meet in realizing our purposes, what reality must be taken as in order to satisfy the demands of the will. Such necessities, it must be admitted, are in large part hypothetical, owing to the fragmentariness of our knowledge.

On the other hand, it is not conceivable that in a universe where truth is admitted as an ontological fact, truth could also be looked upon as an accident — an accidental

variation of a biological process or any other accident. A universe in which truth exists must make it reasonable that truth can exist. There can be no evolutionary epistemology in the sense of biological chance. And the question of the validity of the above postulates is quite independent of any theory of biological evolution.

Is there any difference as regards the primacy of these postulates, — for example, the law of consistency and the law of totality? Is the former self-evident in a sense the latter is not? Is it possible in each case to conceive the opposite? I believe it is. If it is possible to conceive a universe existing in compartments, disparate systems, which do not touch each other at any point, so it is also possible to conceive a universe of flux in which there is no identity, and in which, therefore, no predication is possible. One is no more a fortunate circumstance than the other.[1] But while we can conceive such a world, we cannot conceive thought in such a world. It is also conceivable that a world of dreamy absorption or even of no experience might exist. In such a world there would be no subject-object relation, but neither would there be any thought. So a world of infinite dimensions is conceivable, but thought is not conceivable in such a world.

There can be no priority as regards the presuppositions of thought. If there were, they would not be universal presuppositions. Each must hold for all thought, including itself as well as the other presuppositions. Each is circular in character or incapable of proof so far as epistemology is concerned. It is this circular character of the form of truth which gives rise to the paradox which was already noted by Plato in the Theætetus, viz., that a logical

[1] Contrast Lotze's treatment, "Logic" (English trans.), Vol. I, pp. 94–96.

definition of knowledge is impossible, because in defining knowledge we cannot avoid using knowledge in the predicate, as when we use the definition suggested by "some one" that "knowledge is right opinion with rational definition or explanation." To have a right opinion and be able to give the reasons for it, which is the very essence of the syllogism, certainly seems a satisfactory definition of knowledge. And it took the genius of Plato to discover that this definition was really circular, for right opinion with explanation means "right opinion with knowledge of difference"; and so we have presupposed the very thing we were to define — the form of knowledge. This circular or self-applicable character of the definition of knowledge we have now come to accept. But we must also come to realize that this circular character is in no way remedied by an infinite series of hypothetical reflective acts, to the effect that we know that we know, and again, that we know that we know that we know, etc. Such a series solves nothing. It merely emphasizes the circular character of the form of thought. The truth of truth cannot be proved *a priori*. It can only be proved by its convenience in ministering to the will, which sets the game of thought.

II

And now a word as regards the relation of the will to thought. For finite purposes it is convenient to regard the will as a larger genus than thought. While thought is the systematic activity of the will in its higher development, not all will is systematic, and in this sense is non-rational. Its rationality, at any rate, is prospective, not actual. In our finite sphere there seems to be error, due to false assent or failure to assent to a supposed truth. Such must

seem to the absolute idealist my failure to subscribe to his assumption that reality is an organic experience. If the logic is truly coërcive, my failure to assent must be a certain blindness on the part of the will. It is the old question whether virtue can be reduced to mere knowledge, or whether we must not also assume a certain willingness to accept the ideal, whether theoretical or practical. The will must furnish the goal and motive of thought. Else thought would move in a vacuum. If the will, however, chooses to think, it must do so in accordance with certain rules. It is this deliberation according to certain rules, whether the aim be merely formal agreement or also perceptual termination, which constitutes the difference between thinking and volition in general. To the fully organized will, such thinking has become the normal activity. The will, too, may divest itself of its practical, biological interest and pursue science as a sport — a game furnishing its own logical and esthetic satisfaction apart from its survival value.

We may sum up the place of thought in the economy of life by saying that thought is an activity of the will, predetermined as regards its form by certain presuppositions which are posited by the will to think. It is not the only activity of the will. The will may be instinctive in its activity, it may be perceptual, it may be guided by concrete images, it may dream. But when the will sets itself the task of thinking, whether for purposes of practical necessity or for the enjoyment afforded by the game of thinking itself, the will accepts or postulates certain norms, a constitution of thought. These it postulates in a very different sense from n dimensional or negative curvature space, which it postulates simply from choice for the sake

of a particular thought activity. The laws of thought the will must postulate in order to think at all. The only way the will can choose not to be bound by the necessities of thought is not to think. The will sets itself the task of the conscious definition of its own purpose by means of concepts, and it wills to pursue this process in accordance with certain formal conditions, which it acknowledges as binding for the purpose, viz., the laws of thought. Plato's view in the Parmenides that we cannot know the absolute norms is mistaken. They are few and easily defined. Such norms are for thought, ideals, limits, faiths in the attainability of truth, but as such they provide a goal for our striving, and in a formal way at least, they must be the warp of our thinking. They are not generalizations, but presupposed as conditions by all generalizations.

Does thought, then, transcend itself? No, I should rather say, thought is transcended by the will or faith which sets it, and the demands of the constitution which it must meet. Faith sets the problem of truth — the search for unity. Faith, too, promises the solution, sets the limit of the process, demands that there shall be form or unity. Otherwise thought would be an aimless play with contradictions. Thought, thus inspired, succeeds in approximations, pragmatic formulas, which are as good as true, even if approximations. But thought itself — *i.e.*, the process of judgment, conception and inference — is machinery in the service of faith. Thought is relative — relative to the realization of the will, its work and play — relative, as every function must be, to life as a whole. This relativity of thought is shown whether we examine its subject-object form or its relational content. We can-

not deal with thought as an abstraction without thought becoming paradoxical or circular.

Thus to deal with thought as relative to life as a whole is not assuming that the universe is irrational. That must be determined by the outcome of thought, not by *a priori* prejudices. The very existence of the postulates of thought and the success thought has had in their application shows that the universe in part lends itself to thought's formulation. That it does so altogether is obviously a faith. Whether such a faith turns out to be absolutely true or not, we shall still hold to thought for its convenience in dealing with our world, for its part-truth, its prospective value. There are constancies which we can seize upon in the stream of experience and thus regulate our conduct. Nature not only favors thought as regards capacity and demand, but it puts a premium upon thought as regards survival. What reality must be taken as in the last analysis must be the outcome of the truth experiment.

The impulse to think must not be looked upon as an artificial appendage, tacked on to life without any relation to its fitness or needs. Rather it is a normal expression of life as it unfolds its growth series, as the sex instinct is a normal expression of life and its necessities, however early or late it may awaken. The universe is so constituted as to make through us such demands upon itself for the largest life. And that is all we know. That truth is possible and that truth is worth while is a faith prior to truth and justified by its consequences to the life process of which it is a part. The ego wills to think — both because it is practically useful and because it provides ideal sport — but in willing to think it also wills to accept the formal conditions without which thinking would become impossible. The

will can refuse to think. In that case it can run riot as it pleases, determined by no law except the determinations of pleasure and pain. But if the will chooses to think, then it also chooses certain laws of procedure. Thought itself must accept its own existence and nature as a fact. It cannot transcend its own constitution *a priori* or as thought.

These postulates I hold, indeed, to be true for thinking, but thinking, while of a tissue with reality, is thin compared with the thickness of the process of life. We can, indeed, find our way from part to part, in time and space, by thought. It is convenient to think. And thinking is true to all it can hold. But it is a sieve, which part of reality necessarily runs through. "Ever not quite" must be the qualification of thinking as compared with the fullness of concrete reality. And the "not quite" is usually the big part and the thinking a mere edge.

III

Lastly, I want to offer a caution or two: First it is well to remember, in spite of the mystical tendencies of to-day, that truth is an adjective of *thinking* and has no meaning outside of systematic judgment. We cannot speak of mystical appreciation, any more than of perceptual immediacy, as truth. Truth is always an active sorting of reality as experienced. This need not mean, however, a transmuting of reality as first experienced. The sorting does not necessarily alter the qualities it sorts. If so, there is no way, mediate or immediate, to truth.

In the second place, it is not fair to charge the thought process with the contradictions arising from our conceptual assumptions. Rather overhaul the assumptions. Men

like Spencer and Bradley have charged thought with inconsistency and bankruptcy because of the ready-made assumptions with which they have started. It may be there are ways of conceiving space, time, etc., which are not contradictory.

Thirdly, I cannot agree that thought is the only final way of evaluating life. "There is not only one way to the realm of the gods," to quote an old Viking poem. Esthetic appreciation furnishes another evaluation of life which cannot be reduced to terms of thought, and some who have grown weary of the arduous path of truth have decided to pitch their tents in the restful oasis of beauty. Others again have found in our sense of duty, in the urging of conscience, the key which unlocks reality. Temperament, no doubt, has a great deal to do with our preference here. But what must not be lost sight of is that there are different ways of reaching the final significance of life; and if we are not able to drive the triple team of values abreast, we must at least appreciate that our preference does not annul distinctions — does not make esthetic appreciation truth. The failure to distinguish these types of evaluation, or using thought loosely to stand for each and all indifferently, has been a serious weakness of Hegelianism. They may all be harmonious and complementary in human nature as realized. Identical they cannot be. But while thought is not all of life, and must be understood in relation to life as a whole, it is the only way in which we can, in the last analysis, realize the truth of life, its scales of values. And we must be awake part of the time to estimate the significance of perception or of mystical appreciation. Whether we regard it more important to be awake in order that we may sleep or to sleep

in order that we may be awake, is likely to be decided on the basis of temperament. Both sleeping and waking, appreciation and thought, in the end, must be estimated from their rhythmic place in life as a whole. Certainly the sleeping states, however blissful, have no truth except as taken up into the woof of the waking states.

The main epistemological difficulty as between my idealistic colleagues and myself seems to be that I cannot accept the ontological absolute as a postulate, but insist on proof. I admit that my incredulity here is due to my metaphysical leanings; but I do not see any good reason, in any case, why we should assume a metaphysical theory as a condition of our search for truth. Ought not our method to be neutral enough so as not to prejudice the results of the search? Is it not better to start with the common conciousness, with its dualism of thought and things, and to follow the dialectic of the thought process, as it attempts to master its more or less stubborn world? This would seem to be Hegel's own procedure. If the necessities of the truth process should lead in the direction of an idealistic absolute, I hope I shall be honest enough to accept the implications without abandoning the truth. That I cannot do so now is due to no lack of respect for my idealistic colleagues, among whom I number my friend and teacher, Josiah Royce. Idealism certainly has made the only thorough-going attempt, up to date, to give a systematic account of experience. Its critics seem to have lived mostly on the weaknesses of idealism.

I insist, however, that the hypothesis of the universe as an absolute experience cannot be settled *a priori*. It must come as a result of our success in applying our logical ideals. Certainly the universe is in part rational experi-

ence, for human thinking is an intrinsic part of the universe. In part, too, we have been successful in applying logical categories to the infra-human world. And in so far it cannot be regarded as irrational, whether it is non-rational or not. We find it convenient in any case to distinguish, for purposes of conduct, between the thinking and the non-thinking world and to treat the latter as means to the former as end. I have faith in a higher consciousness than the human as the fulfilment of our fragmentary insight and "the final cause" of the evolutionary process. But I do not see any leading toward this mind in the infra-human world — the world of the stone and the amœba. I must rather seek it in the supra-human reaches as the goal of our ideal striving. While mystical and esthetic intuition may seem to furnish some of us a very intimate acquaintance with such a world, I cannot see that such a faith exempts reason from dealing with it as an hypothesis and from testing it as any hypothesis is tested, through its success in simplifying and guiding experience. I do not deny the possibility of the idealistic absolute. There is certainly nothing contradictory in the conception of such a complete, systematic experience. On the contrary, it must always figure as an epistemological ideal, even if not an ontological assumption.

PART III

THE CRITERION OF TRUTH

CHAPTER IX

From Protagoras to William James

In this chapter I wish to give a brief historic orientation of pragmatism. In later chapters I will take up the pragmatic criterion, as I understand it, more in detail.

I

It is a long stretch historically from Protagoras to William James. Yet critics have not been slow in pointing out the similarity between the doctrine of the founder of ancient humanism and the pragmatic movement of to-day. In this the critics have spoken truer than they knew. For historical research has now made clear that Protagoras was no subjectivist, as was so long supposed, from a misinterpretation of Plato, but a genuine empiricist. I agree in the main with Gomperz's results in his treatment of Protagoras.[1] But I believe that these results, with proper interpretation, can be derived from Plato, especially the Theætetus, which Gomperz discards. On the basis of this new interpretation of Protagoras, we may indeed adopt the first sentence of Protagoras's work on truth as a fair epitome of modern pragmatism: "Man is the measure of all things, of those which are that they are and of those which are not that they are not." Or to use Goethe's paraphrase: "We may watch nature, measure her, reckon her, weigh her, etc., as we will. It is yet but our measure and weight, since man is the measure of things."

[1] "Greek Thinkers," Vol. I, pp. 438–475.

It is a commonplace now that human nature must be the starting point for all our theories concerning reality. We can only speak of those things as existent that make a difference to human nature, either directly as immediate experience or indirectly as assumptions needed to account for such immediate experience as our perception with its microscopes and telescopes furnishes us. If things make no difference directly or indirectly, perceptually or conceptually, to human nature, they are mere fictions, belong in a world of centaurs and mermaids. At any rate we cannot say whether they are or are not.

And what is true in regard to the *existence* of things holds equally in regard to their *properties* and *values*. These, too, must be regarded as included in Protagoras's thesis, for the doctrine of the functional relation of qualities and values to human nature is distinctly attributed to Protagoras in the dialogue by that name. The doctrine of the relativity of values Protagoras inherited from Heraclitus, who showed that values depend upon the relation of the object to the specific will, whether that of ass, or ox, or fish, or hog, or surgeon. "Asses would rather have straw than gold."[1] Relativity of values to the will does not mean subjectivity of values. We can predict values for definite wills. We know what the ox and ass want, under definite conditions. We must judge the values and properties of things, as well as their existence, from the differences they make to human nature in varying contexts. Things are colored, extended, sweet or bitter; they are pleasant or unpleasant, beautiful or ugly, because they belong in a context with conscious human nature. Things or individuals have those properties that we must acknow-

[1] See Fragments 51–58, Burnet, "Early Greek Philosophers," p. 137.

ledge in order to adjust ourselves to our environment or realize our purposes. To speak of a property that makes no difference directly or indirectly to human nature, is to mistake fancy for reality. There is no property in the abstract, no good in general. In this Socrates and Protagoras agree.

So far modern pragmatism and Protagoras are at one. They are at one, too, in applying this criterion to all types of existence, physical or pyschological, natural or supernatural. Knowledge everywhere must be based upon evidence as furnished through human experience. "In respect to the gods," says Protagoras, "I am unable to know either that they are or that they are not, for there are many obstacles to such knowledge, above all, the obscurity of the matter and the life of man, in that it is so short." We must know the existence and properties of the supernatural as we know nature — by evidence. To be sure, in our conception of experience as race experience we are able to eke out somewhat further the evidence that Protagoras found insufficient in individual experience. Individual experience is supplemented by further historic experience in trying out the hypothesis. But human nature still remains the measure.

We know, too, that what differences shall exist for us vary vastly with the efficiency of our tools, perceptual and conceptual. The rings of Saturn or the properties of radium make a difference to human nature only with improved tools, not only in the way of telescopes and microscopes, but in the way of scientific conceptions. Considering the limitations of our powers of perception as compared with the complexity of the objects, this leaves sufficient room for scientific agnosticism. This agnosticism, how-

ever, is one of degree, not of kind. To the extent that we know the properties of things, we must believe that they are such as we must take them. To say, then, that all we know must be known from the difference it makes to human experience must be accepted as an evident, even if tautological, truism. Tautology it seemed even to Aristotle. But, if it is logical tautology, it marks, both in ancient and modern times, decidedly a new psychological step in the development of human consciousness, a step so striking that its recent re-discovery has been well-nigh epoch-making.

II

If human nature is to be taken as the starting point and measure, we must first of all define human nature. Here again the problem is old, and we must strive to learn from the past. Not to orient ourselves with reference to the past is to talk like drunken men or men suddenly awake. A great deal of confusion and misunderstanding could have been obviated in the recent pragmatic discussion and a great deal of energy economized on both sides, if those taking part in it had taken pains to read Plato's Theætetus.

If things exist and are what they are because of the differences they make to human nature, then what is human nature or in what respect must they make a difference? Protagoras in setting the new program, so revolutionary in philosophic investigation, failed, so far as we know, to define human nature. This failure has probably a twofold root. One root is the inadequacy of his psychological tools. Thought and perception were not as yet clearly differentiated. This we can see from the fragments of Empedocles. Thought and perception here alike depend

upon effluences and the action of like upon like. The concept has not yet been discovered. This is the immortal contribution of Socrates and Plato. It is this lack of distinction that Plato feels when he says in the Theætetus that "perception and sight and knowledge are supposed to be the same."

But another, and still more significant reason, we find in the problem which Protagoras sets himself. We learn from Porphyry that Protagoras in his great work on "Truth" directed his shafts against the Eleatics.[1] In other words, the bitter struggle of Protagoras, as of his modern successors, was with the intellectualists. Only the Eleatics were no milk-and-water intellectualists. They had the courage of their convictions. In Parmenides, the venerable founder of the school, they had their unequivocal platform: "For it is the same thing that can be thought and that can be." Thought coërces being. Zeno had riddled the world of perception with his brilliant dialectic, and Melissos had drawn the consequences of the logic of his predecessors: "Wherefore it ensueth that we neither see nor know the many." It was this arrogant confidence in *a priori* thought and contempt for sense that Protagoras set himself to refute.

We cannot wonder, then, that Protagoras seemed to his critics to neglect thought and to place a one-sided emphasis upon the immediate. Here again history has repeated itself. But it seems less of an omission when we remember that there was no need of emphasizing the importance of thought so far as the Eleatic intellectualists were concerned. Knowledge, Protagoras insists, must proceed from evidence. It cannot be produced *in vacuo* by means of mere logical

[1] Gomperz, "Greek Thinkers," Vol. I, p. 450.

consistency. The criterion of reality must lie in the consequences in the way of immediate sense experience. Knowledge rests, in the last analysis, upon perception.

For, with the key furnished by Porphyry, we can see the import of the quotations given by Plato in the Theætetus. The *homo mensura* tenet, which Plato quotes, means that if facts make a sensible difference to human nature, they must be existent, and must be what they seem to be, for the non-existent cannot make any difference to human nature. And again we read: "As Protagoras says: 'To myself I am judge of what is and what is not to me'" — the most unsophisticated can trust his senses. No need of an Eleatic to tell us. And finally: "His words are: 'To whom a thing *seems*, that which *seems* is'"; or, in Hegel's phrase, "The essence must appear." Unless the real can appear in experience and be taken at its face value, not as a lying universe, science is impossible. And in this appearance, so far as knowledge is concerned, human nature is a necessary reagent. Such seems to me the meaning of Protagoras. Such is the meaning of modern pragmatism.

Perhaps the best commentary on Protagoras is his own countryman and contemporary, Empedocles, who, with a similar motive, was combating the Eleatics: "Go to now, consider with all thy powers in what way each thing is clear. Hold nothing that thou seest in greater credit than what thou hearest, nor value thy resounding ear above the clear instructions of thy tongue; and do not withhold thy confidence in any of the other bodily parts by which there is an opening for understanding, but consider everything in the way it is clear."[1] Thus must we put nature upon

[1] Lines 20–24, Burnet's translation.

the rack. This is Empedocles' plea for sense evidence; and his belief in the dependence of this sense evidence, both as to kind and to range, upon the conditions of the human body — its substances and pores, did not make him a subjectivist.

Plato's interest, in the Theætetus, is not in Protagoras's own meaning, but in the psychological and logical consequences which seem to him to be involved — quite unsuspected, as he admits, by Protagoras himself and his disciples. Thus Plato hopes to point a moral to the subjectivism in his own day. To make short work of his opponents, Plato groups together several doctrines, the *homo mensura* doctrine of Protagoras, the later doctrine of Theætetus that knowledge is perception and the flux theory of the later Heracliteans, all of which Plato gives the brand of relativism, thus producing confusion in the mind of his successors. And here, too, history has repeated itself in the hopeless jungle of doctrines to which the term pragmatism has been applied by its critics.

Plato's interpretation of human nature, when he sets himself to "understand" Protagoras, is surprisingly individualistic. "Man" must mean "men." He then proceeds to draw the consequences of such an individualistic interpretation. Protagoras, like the early Fichte, had failed to define his ego. He had not been forced like Kant, through a long discussion, to have recourse to "consciousness in general." It was simply natural for him, coming before the individualistic period, and with the spirit of the natural scientists still upon him, to assume human nature to be one: or, as we learn from the dialogue "Protagoras," to regard man as primarily institutional.

But man as man does not have perceptions. So Plato

argues. Seeming must always be individual seeming. So many men, so many seemings. If that is the case, the truth of the seeming is not guaranteed by the individual seemings, whether of man or of tadpole, but is the result of a constitution presupposed in the seemings and only to be arrived at by conceptual construction.

If Protagoras failed to define man, he also failed, according to Plato, to define seeming. Scrutiny will show that not all immediate experience is to be equally trusted or to be regarded as equally valid. There are illusions of perception. Immediate perception, therefore, cannot be trusted indiscriminately as evidence of reality. So Plato makes the latter relativism do service against the common-sense theory of Protagoras. But pathological cases should not make us discredit perception altogether. In thinking, too, we have error — fallacious and insane thinking. But should we, therefore, discredit all thinking? Plato by his brilliant undiscriminating criticism of perception paves the way for skepticism altogether. While illusions mean a wrong assimilation of a present sense quality with a complex of sense qualities as experienced in the past, this does not prove that we have any other way of ascertaining the conjunctions of qualities except by sense-experience. Seeming must here correct seeming, through further experience. Thought can only furnish a systematic method of procedure, not the actual conjunctions.

Memory and expectancy, Plato further contends, point to a constitution which cannot be expressed in terms of immediate seeming. In so far as we imply these, we have transcended mere perception. But while this is true, are not memory and expectancy after all built upon seeming —the re-occurrence of an identical content which suggests

its own previous context? And does not the value of memory lie in enabling us to draw upon the conjunctions of past seemings in order to meet future seemings?

If you take our feelings of value instead of our perceptions, here too, Plato argues, we cannot speak of measure or validity, so long as we remain on the plane of mere immediacy. A dog-faced baboon has the same claim as Protagoras so far as immediate feelings are concerned. But we must not forget that the rôle of thinking must lie in finding and weighing the implied presuppositions in our immediate sense of values; and that all it can give us, here too, is systematic procedure. It does not create its data in the case of value any more than in the case of sense qualities.

Thus Plato argues in his own matchless and one-sided way, that on the plane of immediacy there can be no question of truth or falsity. As seemings they equally exist. The problem of validity arises only with conceptual definition, systematic thinking. He must be a wise man that is to be the measure. Truth cannot be decided on the ground of seeming or duration, but on the ground of its rational coherency. If Plato shows at the end of the Theætetus that his abstract definition of truth is circular, this confession of logical failure is inevitable, on the intellectualist basis, *i.e.*, so long as we try to define truth in strictly formal terms. The difficulty can only be overcome when we state truth pragmatically; that is to say, in terms of procedure or leading.

The individualism which Plato falls into in criticizing Protagoras would make all knowledge impossible. It can be turned against thought as well as perception. Thinking, as well as perception, must be the reaction of individual human nature. The individual errs in inference as

well as perceptual judgment. Individual thinking must be corrected, as must illusory perception, in the course of future experience, individual and social. In our finite experience, knowledge is a piecemeal affair, and seeming must correct and supplement seeming. Absolute truth is for us a limit. Our faith must be a faith in the leading of the seemings, even though we never should arrive. Plato, in his new enthusiasm, exaggerated the concept, as much as Protagoras exaggerated perception. The concept is a splendid tool, but its value lies in its anticipation of reality as sensed and felt, as concrete and individual. Plato, the absolutist, by failing to recognize this fact plays into the hands of the skeptic.

Plato sometimes narrowly escapes giving us the whole truth. In the Symposium and Phædrus he arrives at the concept of beauty by discovering the common beauty in many instances, "going from one to two, and from two to all fair forms, and from fair forms to fair actions, from fair actions to fair notions, until from fair notions he arrives at the notion of absolute beauty, and at last knows what the essence of beauty is." In other places he employs the method of limits; and again that of mystical appreciation. But the beauties of earth, the immediate facts, are only stepping-stones, the first rungs of the Jacob's ladder which, once having ascended, the soul is satisfied and does not need to redescend to test the concept with reference to the facts. Even when it is forced to redescend, as in the case of rulers serving apprenticeship in the world of shadows, it is only to mark the deviations from the Idea, not to verify it. At least such seems Plato's attitude in the Republic, Symposium and Phædo.

What misled Plato, apart from his poetic bent of mind,

was his passionate interest in one group of concepts, viz., the normative concepts, which he confused with the class concepts, which he also regarded as Ideas. In the case of the normative ideals or limits, it does seem as though they must be primarily *a priori* — only elicited by the midwife experience. For without our ideal demands or instincts for meaning and beauty, we would not seek for meaning, for unity, or for order within the chaotic world of the immediate. This formal interest came to dominate largely the ancient world through the influence of Plato and the new ethical and religious spirit of the age.

In Protagoras and Plato we have the two poles of the problem of knowledge. It is the merit of Protagoras to have shown that there can be no knowledge without the evidence of immediate experience. What seems must be, or science is impossible. It is the merit of Plato to have shown that there can be no knowledge without systematic thinking. Without concepts sensation is blind. Protagoras may have over-emphasized the place of sense perception in investigation. Plato slighted the perpetual data and was inclined to let the mill of reason grind *in vacuo*. Each developed his brilliant half-truth as a corrective to the prevailing tendency of the age, Protagoras in opposition to the apriorism of the Eleatics, Plato against the immediatism of Aristippus. If they did not emphasize the other side, it was for the reason that it is not necessary to carry coals to Newcastle. By such zig-zag the history of thought progresses.

III

It remained for modern science, in its brilliant history, to show the importance of both hypothesis and immediacy.

Data become science only when illuminated by thinking or hypothesis. Science is the constructive or systematic functioning of human nature, not mere perceptual continuity with its environment. It is the purpose of science to construct or build out, on the basis of past experience, a conceptual network or differentiation of purposes to meet the variety of properties and changes in the environment. The equivalents furnished by our scientific system may be artificial enough, tools merely for our anticipation and mastery of the processes, as in the physical sciences; or they may be of a piece with the world with which they deal, and lead to understanding and appreciation, as in social relations; but in any case our ideal construction must be verified with reference to the ongoing of experience.

To be sure this building out of immediacy has been recognized in natural science primarily. And here we have lagged behind the Greeks. The immediacy of perception, bound up with the specific energies of the senses, is the only immediacy adequately taken account of by modern science. The other type of immediacy, that of feeling and will-attitudes, involving physiologically, beside the specific cerebral tendencies, the more diffuse changes of the motor, sympathetic and vascular systems, has been largely ignored. Yet the *values* of objects must be regarded as equally significant with their properties. If the sense qualities are functional relations of human nature to its objects, so also are values. Objects no more have qualities in the abstract than values, and by value I mean the satisfaction which objects can furnish to our will as contrasted with the sense differences which they can make. If the world of properties is capable of being taken in an orderly

way, so also is the world of values. And the later Sophists were quite right in saying that if one is subjective, so is the other. What we must recognize is that if, by means of hypothesis and experiment, we can build out the immediacy of sense qualities into an objective world, we can just as surely build out an objective world of worth from the immediacy of our longings and demands with their implied formal presuppositions. The immediacy of feeling, too, has cognitive significance and can be made to yield, with freedom and intelligence of development, an objective order of worth, as surely as natural science, out of the immediacy of sense, can build the order of nature. This has been and is being done in the esthetic and religious development of the race. The pragmatic method applies to religion as much as to science; and though one life is too short to know much either about nature or the gods, the experience of the race must supplement and correct the experience of the individual. The solidarity of the race is presupposed in either case.

We may define pragmatism as scientific method conscious of its own procedure. The scientist has not always known what he was about. Sometimes he has emphasized the essentially innate nature of truth with Descartes and his followers. Sometimes he has demanded pure perceptions and a *tabula rasa*. Even when he has furnished good canons of procedure, he has not always been awake to what he has been doing. Pragmatism is not the invention of a new method; it does not furnish any new hypothesis; but it insists that the scientific spirit of tentative hypothesis and verification shall dominate all our investigation, not only naturalistic, but philosophic as well. We must shear the luxuriance of imagination to fit the facts. Life must

be given to winged thought by touching the earth of evidence again. And unless the hypothesis, however ingenious, helps us to anticipate and control, or understand and appreciate the onrushing stream of human experience, it is not science but fiction, no matter how internally consistent it may be. The Newtonian equations, the religious beliefs, must terminate in the intended facts. Failing this, ideal construction must set to work afresh, until at least greater approximation is reached. An hypothesis, whether of atoms or morals, God or devil, is true because it works.

We do not wonder over the disappointment at this lack of novelty in the pragmatic method. No doubt Dr. Paul Carus expresses a general feeling when he says: "If pragmatism, as commonly understood, were truly nothing but another name for 'scientific method,' it would not have anything new to offer."[1] But what the critic forgets is that pragmatism is the baptism of a new consciousness as to the meaning of science. It makes definite and articulate what was only implied before. Few great reformations have been original, to any great extent, in their intellectual content. Their originality has lain mostly in the simplicity and directness of their aim — the clearness and intensity of their emphasis. And there is a good deal of difference between the common talk of agreement, begotten between intellectual sleeping and waking, and the clear consciousness of what the agreement of an idea with its object means — the termination or leading of an idea into its intended facts. It emphasizes negatively that there is no other criterion of validity beside conduct; that mystical feeling, however subjectively satisfactory, must, in order to be proven true, submit to the test of the procedure of ex-

[1] *Monist*, October, 1910, p. 615.

perience; and that no *a priori* conviction, no dogmatic insistence upon the inconceivability of the contrary, can have anything more than subjective significance, unless it terminates in the systematic experience of the individual and the race. They are no substitutes, in any case, for investigation and have, as feelings, attached to all sorts of ideas. We have but a single criterion of truth — the procedure of experience.

Does truth, as thus conceived, seem transient, provisional and pluralistic? This is only because we have become intellectually honest — conscious of our poverty. Truth has just as much unity and constancy as its use in experience indicates. Grand assumptions about it do not increase either its permanency or reality. Its permanency and adequacy to reality must be tested by our ability to take reality that way. Its leading, so far as effective, is not arbitrary but due to its seizing upon the real characteristics of its intended object, whether eternal or transient.

If pragmatism is essentially the scientific spirit, there is always need of a renaissance of the pragmatic consciousness in science. The authority of great names — the Archimedeses and Aristotles and Newtons; the impressiveness of tradition and technique, are too apt to overshadow the real, inductive spirit. We read facts out of court, or at least refuse to investigate, because the facts or alleged facts are supposed to be contrary to "laws," the only status of which is that of generalizations from facts. How great a rôle the *a priori* inconceivable, as we are pleased to call our intellectual prejudices, still plays in science! If it is no longer the inconceivability of the antipodes, it is the inconceivability of action at a distance, the inconceivability of mind influencing body, etc. When shall we

learn that the best test of whether a fact *can* happen is whether it *does* happen and that it is the province of reason not to *prescribe* the conditions, but to discover the conditions under which events happen? If our intellectual models make our procedure impossible, we must revise the models. If this is difficult in science, how much more in religious and legal practice. What a reform in science, law and religion alike, if we once had the courage to drop hypotheses which make no difference to our procedure. The value of conceptual technique is precisely to furnish such leading as will terminate in the facts. If it substitutes an abstract model for the facts, it should not be for the sake of hypostatizing the model, but for the sake of better anticipating the facts.

IV

In its general emphasis, as well as in its thesis, modern pragmatism follows closely its ancient forbear. The scope of hypothesis or creative imagination has been largely neglected by modern pragmatists, as it was by Protagoras of old, and for similar polemic reasons. It is obviously so neglected in the thesis that truth consists in its consequences. It would be at least equally true to say that truth consists in hypothesis or in certain instinctive demands for unity and simplicity, for without either there could be no such thing as truth. We should be simply staring at things. We must not neglect the creative factor in knowledge — the building out by constructive imagination, as prompted by certain fundamental instincts, beyond the immediate, beyond sensations and feelings. It is true that this building out must be supported in the end by evidence, by consequences of immediate experience, but it is also

true that without this building out of creative imagination, we would remain hopelessly swamped in the slush of subjectivism. On the other hand, mere hypothesis, while it may have its subjective value, cannot by itself give us objective truth. It must be tested by evidence, as well as by the subjective satisfaction which it gives. And pragmatism has done well to insist upon this truth, as against the subjective imagination of such philosophies as Hegelianism.

In two important respects modern pragmatism has the advantage over ancient. One is in its superior psychological tools. It has shown more clearly than before, especially through William James, the teleological nature of the thought process, its connective value in the flow of experience, how ideas lean on facts and how facts are organized by means of ideas.[1] The other advantage of modern pragmatism is its evolutionary and racial consciousness. To a large extent it is the outgrowth of the Darwinian spirit. It is a theory of the survival of hypotheses — those surviving which fit experience. But a theory of elimination, important as it is, cannot by itself account for knowledge, any more than the doctrine of the survival of the fittest can account for life. The variations themselves must be understood through their structural continuity with the past. In the case of knowledge this continuity becomes an instinctive or "physical heritage" in the form of certain demands, tendencies or needs. And it also becomes a psychological continuity or an imitative dependence upon the institutional life of the race, the "social heritage." The ideal variations or purposes must find their explanation in this twofold background, *i.e.*, the biological

[1] In this connection should also be mentioned the important influence of Dewey's "Logical Studies" and Schiller's "Humanism."

tendencies as becoming conscious of themselves in attempting to assimilate the social heritage, and use it in the service of the ever new problems of life. From this process emerge the new purposes, guesses or hypotheses. These ideal constructions or demands must be tried out with reference to further experience; and those will survive which afford an advantage in meeting the intended object. More than one hypothesis may work for the time being; and at a certain stage of development a cruder hypothesis may work better than a conceptually more perfect one. The crude four elements of Empedocles seemed to work better for the time being than the ingenious hypothesis of Anaxagoras or even than the atomic theory of Democritus. The axiom of an eye for an eye and anthropomorphic gods worked better at a certain stage of development than the golden rule and spiritual theism. In the long run, however, the workability of an hypothesis must mean correspondence with the reality which it intends — the seizing upon its identities for the guidance of conduct.

Beliefs, instinctive or articulate, are the grist which the pragmatic mill must grind or else grind itself. Human nature, conditioned as it is by its biological and social background, constructs its belief-worlds to supplement its inner needs. It is this impulse to create belief-worlds which has made religion advance by ever new variations and eliminations from fetishism and nature-worship to ethical monotheism; which has made science advance from the hypothesis of Thales that all is water, to our modern complex physical and chemical theories. These belief-worlds are not only thrown about us by ourselves, in our individual capacity, to be cozy in our world. They are first of all thrown about us by the race which wraps us snugly in the

swaddling clothes of its own making. Else we would all start naked, to cover ourselves with fig leaves. Every scientist would be a Thales. It is only in the course of individual experience, if at all, that we make the old thought-clothes correspond with the new individual preferences.

V

Knowledge, we have seen, must mean the differences that stimuli make to reflective human nature. All experience must be assessed from the reflective level — must issue in articulate judgments, if we are to have truth. Perhaps we may, in the light of the preceding discussion, venture to offer the following tentative definition of truth. Truth consists in the differences which objects make to the reflective conduct of human nature, as in its evolutionary process it attempts to control and understand its world. This definition of truth recognizes the contribution of both the empiricists and rationalists, Protagoras and Plato. Both hypothesis and evidence, reflection and immediacy, are necessary to truth. It recognizes, moreover, the finitude of truth as an adjustment to an infinite process.

Past misunderstandings, however, lead me to think that the pragmatic doctrine of truth needs more explicit definition at two points. One has to do with the significance of the term conduct, the other has to do with the relation of pragmatism to nominalism.

First a word as regards the significance of the term conduct. My own conception of pragmatism is that its definition of truth in terms of conduct is fundamental. In this sense it is a "practical" theory of truth. It has to do with the procedure of thought, the control of our ideas in relation to an intended object. But here there has been

considerable confusion. The original use of the term pragmatism by C. S. Peirce had to do with laboratory conduct specifically — the procedure in the experimental verification of an hypothesis. In James, Schiller and Dewey the emphasis has been on biological conduct — the attainment of certain goods on the part of the organism. No doubt truth is tested in part by our ability to control the environment for our specific purposes. But truth need not be practical or instrumental in this external sense. Its leading may be of a formal kind, as in mathematical procedure. Its aim, too, may be that of understanding and sympathy, rather than use, as in our striving to know other egos. I have used conduct in a wider sense — including the conduct of the understanding as well as biological conduct.[1] Truth must be measured in terms of the reflective procedure of our entire human nature in realizing its tendencies, formal or practical. It still remains true, on this more inclusive definition, that the truth of an idea consists in its leading, its ability to guide in the direction of its intended object, whether a chemical compound or an algebraic root. Thus taken, the term pragmatism will be true both to its Greek derivation and to all the requirements of logic. The rules which the will must acknowledge as governing this procedure of truth, I have discussed elsewhere.[2]

As regards the relation of pragmatism to nominalism, there has been considerable wobbling between the definition of truth in terms of leading on the one hand, and in terms of particulars on the other. I believe these to be incompatible definitions. If truth consists in the sum of particulars, there can be no leading. A photographic or

[1] See chapter X, pp. 187–189.
[2] See chapters VII and VIII.

cinematographic copy would be quite useless for purposes of conduct. Truth can never lie in the sum of particulars or their mere external association. Who wants to count the sand on the seashore or the leaves of the trees? It would be quite worthless, even if not practically impossible. The leading is made possible by the thread of identity — the ability to substitute certain constant characteristics for the motley world of facts and changes and thus to manipulate it in the service of our purposes. In the Litany of pragmatism let it be written: From the taint of mediæval nominalism, deliver us.[1] With such an understanding as regards the meaning of pragmatism, it ought to proceed more efficiently on its career of simplifying and unlocking the problems of life, theoretical and practical.

[1] In this I am happy to find myself in agreement with my friend, Dr. Horace Meyer Kallen. See *Jour. Phil. Psych. and Sci. Meth.*, "The Affiliations of Pragmatism," Vol. VI, pp. 657 and 658.

CHAPTER X

What Pragmatism is and is Not

The confusion in regard to pragmatism by its critics on the one hand and the variety of doctrines included under that term by its defenders on the other hand, make it highly desirable for all concerned that there should be a definite understanding as to what pragmatism means. Failing such an understanding, the term pragmatism should be dropped out of the vocabulary of philosophy. This would be a pity, as the term short-hands a good deal of circumlocution and has already been widely used. What place pragmatism shall ultimately come to have as regards various schools of epistemology or metaphysics, whether the old labels of idealist and realist, spiritualist and materialist, empiricist and apriorist, can still be retained, is of little consequence except to those who must set their house in order, providing that pragmatism as a doctrine must be reckoned with.

In the first place, pragmatism as a doctrine is so simple and so old as a matter of scientific procedure that it is impossible to understand why so much dust should have been raised about it by its opponents. It is simply the application of the ordinary method of the scientific testing of an hypothesis to philosophic hypotheses as well. It is certainly high time that philosophy, in many respects the oldest of the sciences, should take on scientific definiteness and severity or else regard itself as a department of poetry.

Now pragmatism, as so often stated, holds that you cannot test the truth of an hypothesis or judgment independent of conduct. The truth of an idea or plan must be tested by the procedure to which it leads. You can, of course, insist with the mediæval critics of astronomy that there must be seven planets because there are seven days in the week, etc., *i.e.*, from the *a priori* fitness of things, but the curiosity upon which science is based always insists on trying the assumption; and if experience indicates more planets, we revise the hypothesis to fit the facts. This is the "practical" testing of a doctrine in science.

The testing of a doctrine in terms of conduct, or comparing the anticipated consequences with the consequences to which it leads in being carried out, need not always mean material consequences. There is a conduct of the understanding as well as a conduct involving certain perceptual events as its outcome. The procedure may be entirely of a logical kind as in formal logic and pure mathematics. But here, too, the idea is true only as it terminates consistently in its intended result. The consequences must be shown to follow from the definitions and not from assumptions or intuitions surreptitiously introduced in the course of the argument. The rules of logic, as the rules of ethics, have been adopted for their convenience in conduct.

Common sense and intuition may short-hand our scientific methods, and are valuable in many cases, but they are not truth, in the scientific sense, until the conclusions thus arrived at are systematically tested in the actual procedure of experience.

We sometimes have to choose between different rules or concepts. In this case we must ask ourselves what difference will it make if I choose one rather than another

method of procedure. It may make no ultimate difference. The same problem can be solved by plain arithmetic or by algebra. Both solutions are equally true. Only habit and convenience, therefore, can decide between them. When two roads lead to the place to which I want to go, other things being equal, I take the most economic road. Esthetic or other motives, however, may influence me, besides the mere desire of arriving, and so I may choose the longest route. And so in the choice of hypotheses. But in any case the hypothesis is verified only as it terminates in the intended result; as its ideal consequences tally with the conditions which I have set myself to meet, whether purely logical or perceptual as well.

Now I certainly have a right to profit by previous experience, whether my own or that of others. I may have faith in a chart of the road already provided, without going through the trouble of mapping the routes in that particular neighborhood again. But this deductive truth rests no less on conduct; and if it should fail, in the process of adjustment, to satisfy the demands of further conduct or experience, it must be revised, however venerable or distinguished may be its ancestry. Truth about reality as a whole, or any part of it, however abstract, consists in the differences that reality makes to our reflective purposes in their historic realization.

To ask, therefore, whether a statement is true is equivalent to asking: What must we take the selected object as, in the procedure of experience? This is as true of the formula, $2 + 2 = 4$, as of the proposition, Socrates is mortal. For some purposes taking two pounds twice is equivalent to taking four pounds once. This obviously is not always so. Taking two women one hundred pounds each

is not equivalent to taking one woman two hundred pounds if the purpose be marriage. In the former case you will be thrown into jail for bigamy. The intuitional character of the formula is due to the fact that we have forgotten the concrete procedure, the beads, for example, that were used by the primary teacher to overcome our stolid incredulity. The only way that you can know that you know is by trying out your knowledge, and even then, owing to the finitude of our nature and the complexity of reality, our certainty is decidedly empirical. We no doubt confront the environment with all sorts of tendencies or categories, more numerous than Kant's table, but truth they are not, until they are reflectively tried out, in the procedure of experience.

But is not truth agreement with reality? the hard-headed critic always comes back. Yes, certainly, *i.e.*, with the reality which we intend, which may be the constitution of number or of a chemical compound. We rarely ever aim at reality as a whole, any more than we aim at a bear as a whole when shooting at him. The subject of our judgments is almost always a selected part of reality, not reality in general. But the pragmatist doctrine, so far from denying that truth is agreement with its intended reality, has for its purpose to make explicit what we mean by such agreement. And what we mean is what science always has insisted, viz., that the consequences which follow from the hypothesis, or the constitution of the object *as we have conceived it* on the basis of past experience, shall tally with the consequences *in dealing with the object*, or with further experience, formal or empirical, according to the problem set. There is no such thing as agreement in the abstract; no way of finding out the truth

of an idea by merely examining its eternal fitness in general. It must, in order to be true, fit its intended constitution, as Royce has so splendidly shown, and this can only be found out by observing the results of our experiment, by the tallying of our hypothesis with our systematic observations. The data thus caught, simplified and organized through the network of our concepts, which in turn have been progressively modified to meet the demands of the data, is what we mean by the laws of science. Whatever reality may be, science is a systematic sorting of experience in the realization of our interests.

I suspect, however, that what has given rise to this long and confused controversy is not pragmatism as an epistemological theory, but the various epistemological and metaphysical consequences which some of the "pragmatists" have arrived at, supposedly by the pragmatic criterion, and which have been included by them and their critics under the general heading of pragmatism. Of course, if you include any professed pragmatist's results under pragmatism, then you will have an indefinite number of pragmatisms with hopeless confusion of the epistemological issue.[1] Just because a professed pragmatist, even William James, happens to hold a doctrine does not necessarily make it part of the theory of pragmatism. His philosophic results would have to be tested by the pragmatic criterion, quite irrespective of his having subscribed to it. Even the best people's conduct does not always agree with their ideals. And the pragmatic criterion is an

[1] Lovejoy's "Thirteen Pragmatisms" seem a petty allowance, when you consider the variety of human nature and the number of possible applications of the pragmatic method. But such analysis has been wholesome in exposing the confusions in the pragmatist camp and thus clarifying the main issue. See *Jour. Phil. Psych. and Sci. Meth.*, Vol. V, Nos. 1 and 2.

epistemological ideal, which we finites can, only by cumulative striving, if ultimately, realize.

Let us see briefly now what pragmatism is not. In the first place pragmatism does not involve that the true and the useful always coincide. Such an *a priori* assumption about the universe is anything but pragmatic. Truth may, of course, turn out to be useful. I would not say with a German scientist that the best part of science is *dass es gar nicht anwendbar ist.* The utilitarian motive has often been important in the investigation of truth, sometimes on the part of the investigators, but more often in the material promotion of investigation. It is true, however, that the most important investigations in pure science, such as the beautiful researches in light and electricity, were carried on without reference to their utilitarian consequences by people inspired by a divine madness to discover the hidden harmony of things; and their results were finally patented by people who reaped where they had not sown. But whether researches are useful or not, their usefulness does not make them true. On the whole we are doubtless better able to adjust ourselves to an environment because we know more about it, can respond to its characteristics, though in limited, pathological cases ignorance and deception may be more useful than truth. But the statement that truth is, on the whole, useful is a conclusion and not a part of pragmatism as an epistemological criterion. Whether it is a legitimate pragmatic result, any one is free to test, where all hypotheses must be tested, in the procedure of experience.

In the second place, pragmatism is not equivalent to humanism. No doubt it is true, so far as we are concerned, that reality must pass through human nature to be known.

We humans know reality by the differences it makes to our human, specific, reflective purposes in their attempt at realization. But it is not our being human that makes our hypotheses come true; it is their tallying with the constitution of the object aimed at, as it appears in further experience. And there is nothing to show that this experience, whether on its logical or perceptual side, is peculiarly human. The weight, or color, or size or position of a thing is not peculiarly human as distinct from other animals. A "dog-faced baboon," so far as we know, has the same sort of perceptions that we have, and is subject to the same laws of association. If a dog-faced baboon or a tadpole should construct hypotheses or their equivalents, they would have to be verified in the same pragmatic way as human hypotheses are. It matters not what sort of finite being tries to arrive at truth, whether man, baboon, or angel, the test of truth, so far as we can see, would be the same.

If what is intended is the statement that the nature of reality is made over in knowing it and that therefore we are limited to the charmed circle of experience, this, too, is an unpragmatic assumption. While it is a mere circle to say that we can know reality only as it appears in cognitive experience, or for what it must be taken as, it is a gratuitous assumption to insist that what reality is known-as, is contrary to what reality is, that the weights and distances and masses of things exist only as we humans take account of them. When we take account of them, they have *meaning* for us, but our taking account of the qualities of things at all is generally forced upon us by their existence, which we must meet in order properly to adjust ourselves. At least it is not pragmatism to decide *a priori* that things are not what they seem.

May there not be cognitive beings superior to us humans? Or are the humanists absolutely convinced that we humans are the only cognitive beings in the universe? That certainly is no part of the pragmatic theory of truth; but, even if true, it is not being human that makes a proposition true, but its termination in the intended facts.

Is pragmatism, as a theory of truth, committed to the instrumental point of view as regards concepts? Not in the sense that truth exists solely for the sake of satisfying certain demands extraneous to itself, for example the biological end of adjustment. Truth sometimes finds its inspiration in such practical demands, but it sometimes finds its motive in scientific curiosity. In any case the test must be the same. Truth is always teleological, because it exists for the sake of a relation to a larger whole, but this relation need not be instrumental in the narrow sense that truth is an extraneous tool, like a knife, to be judged by its mere success. False ideas may be temporarily successful. Truth as a matter of fact must always be imitative of its object to a certain extent. It can never be conventional in its *content*, however conventional our *symbols* may be. In the case of knowing a system of truth it must be imitative of the meaning of the object; in the case of thing-objects it must be imitative of certain qualities of the object. Inasmuch as our finite truth is not exhaustive, but always implies a more, a larger constitution to be investigated, it must be regarded, in so far, as instrumental to its own completion, a means to its own more comprehensive end.

Can the pragmatic criterion be stated in terms of satisfaction? That depends upon what sort of satisfaction we mean. No doubt the seeking for truth has its own

hedonic tone, according to its success or failure. The satisfaction, so far as the truth interest is concerned, is the tone accompanying the testing of the hypothesis in procedure, so far as that special intent is concerned. But the truth satisfaction may run counter to any moral or esthetic satisfaction in the particular case. It may consist in the discovery that the friend we had backed has involved us in financial failure, that the picture we had bought from the catalogue description is anything but beautiful. But we are no longer uncertain as regards the truth. Our restlessness, so far as that particular curiosity is concerned, has come to an end. And this satisfaction may sometimes be strong, even when the practical outcome is against us. The rejected lover gets some peace of mind from knowing the truth as to his failure. But this is hardly the satisfaction of winning his suit.

Is pragmatism realistic? Only so far as it intends a world beyond our finite cognitive purposes. The finite fragmentary intent must find its reality or correction in a larger whole. I do not know of any striving for truth which is not realistic in this sense. How could it be a striving for truth otherwise? But obviously a criterion of truth must be unbiased at the outset as regards the epistemological or metaphysical result of its application. The reality we seek to know may ultimately be more experience — yes, we must be willing to have it turn out to be an absolute unity of thought, if the procedure of truth leads that way. But pragmatism neither assumes at the outset that the object in order to make any difference to the cognitive purpose must itself be experience, nor does it assume *a priori* that reality cannot possibly be what it is known as being, because external to experience. What

reality is, what differences it can make, is precisely to be found out. The constitution of the universe is idealistic or materialistic, monistic or pluralistic, according as we must take it, as the outcome of the pragmatic test. But we must all start with the same criterion, else there can be no discussion of truth.

Truth is systematic meaning, systematic experience about the object. This meaning, in case we are striving to know other experience, must be identical with the content of the object; but the qualities of an object which is not experience may become content for us through perception. In any case truth is our systematic *percipi*, as it is revealed in our specific procedure, whatever the metaphysical character of the object may turn out to be. We have no right to take for granted that what is to be known is more content, independent of our knowing, with which our preformed guess can be accidentally identical and so be called true in advance of verification.

It is difficult for me to understand what is meant by unverified truths — unverified science, truths which no one knows to be true, for if any one knows them to be true — God, or man, or monkey, they have fulfilled the pragmatic test. They are seen to terminate or find their completion in the intended object. If a proposition has no systematic basis in experience, we speak of it as a mere guess. As that brilliant pragmatist, Xenophanes, puts it, "All are free to guess" and, "These are guesses something like the truth, . . . but by seeking they gradually find out what is better." In Xenophanes's time there was but little cumulated scientific observation. Hence he is naturally impressed with the guess character of his statements about the universe. When a supposition is based upon analogy and previous

scientific observation, we call it an hypothesis, but it is only as the hypothesis is fully tested in terms of the intended facts that we call it truth. Truth, therefore, so far as we finite seekers are concerned, is a limit which we are far from having realized. Whether we can realize it or not, only the historical outcome of the pragmatic test can prove. It is certainly unpragmatic to say in advance that truth is unrealizable. In the meantime we have our provisional "truths."

I suppose the reason that some have insisted upon propositions being true in advance of being tested is that in individual experience, especially in an advanced stage of science, we find a large body of social truths, which we can take, for practical purposes, as ready-made. We find that truths exist independent of our individual verification, and then some assume that they exist independent of all verification. Seeing the agreement of the hypothesis of gravitation with its intended facts, they insist that the hypothesis must be true in advance of the discovered agreement, as though truth could be a guess *in vacuo*. What they mean is that reality has a constitution in advance of our investigations and that so far as our cognitive nature is concerned the qualities of reality are not created, but discovered. Whether they are created through our volitional nature, or exist independent of our act or positing, is a question which the application of the pragmatic method alone can determine. But all this controversy about preëxisting truths is a lexicographical one and would be over if we recognized the established philosophic usage, as old as Xenophanes, that truth is systematic meaning, corrected and completed in its intended reality.

If we state truth thus, there can be no ultimate differ-

ence between truth and the test of truth. A proposition is *proven* to be true because it terminates in its intended object, imitates this either as regards its inner content or as regards its qualities. But it *is* true for the same reason. What makes the test of truth seem something different from the truth itself is that in the process of verification the test seems external to the intent of thought. It seems to happen to the idea in a more or less accidental way. But this is a superficial way of looking at the process of discovery. For the facts only happen to the intent of thought *because we are seeking them*, however much our meaning may have to be corrected in the process. The test is our further experience about the object *as selected* by the intent. But the intent is not, taken by itself, the truth, any more than the consequences of further experience are the truth taken as external happenings. It is the intent as terminating in the selected facts which constitutes the truth. And this termination is the test of truth, or the intent as tested constitutes the truth.

Is pragmatism a theory of empiricism as opposed to rationalism and *a priorism?* No, pragmatism is not committed to any *a priori* doctrine of the origin of ideas or their connection. It is not committed to Hume's association theory any more than to Plato's doctrine of recollection from previous existence. Pragmatism may be said to agree with rationalism in holding that truth has a formal side. An hypothesis or system must be internally consistent. But pragmatism insists that this is not sufficient: there must also be external agreement, or agreement of the hypothesis with its intended facts. As regards the other historic antithesis, that of empiricism and *a priorism*, pragmatism is equally non-committal. It is a theory of the test

of truth, not of the origin of its categories or postulates. Whatever demands or tendencies are inherited, they must be consciously tried out in experience as regards their agreement with reality before they can be called true. The categories might originate by use-inheritance, by natural selection, by divine implanting, or by mystical intuition, so far as pragmatism as a theory of truth is concerned. The question is: Will they work in simplifying experience and meeting the character of the environment? The theory of their origin must itself be subjected to the pragmatic test.

Is pragmatism at the outset committed to time and chance as the ultimate character of reality and, therefore, to the impossibility of any final truth? This again is a theory to be tested by its pragmatic outcome. *A priori*, eternalism may be the outcome of pragmatism as well as dynamism; or perhaps partly the one, partly the other. Because the discovery of truth is a temporal process, it does not follow that truth relations as discovered are temporal. The truth $2 + 2 = 4$ may be eternal, however long was the evolution which led to its discovery. At any rate, there can be no such thing as pragmatic dogmatism.

A professed pragmatist may of course hold any of these doctrines, and a large number of them, either as his individual application of the pragmatic test or for other reasons. He may also, like myself, be an Episcopalian, a free-trader, etc. Do all the doctrines and practices of the Episcopal church become pragmatisms when a pragmatist belongs? I have known pragmatists to drink beer, to attend dime theatres, and even to swear. Are all such practices with their implied damnable theories of life therefore pragmatisms? And do they also come under *Scepticismus*, as the

German critics would say? God forbid. It makes one's flesh fairly creep to think of all these uncanny associations — these sins on the part of our clever young critics, committed in the name of pragmatism. But are they not, after all, primarily sins against formal logic? A is a free-trader. A is a pragmatist. Therefore all pragmatists are free-traders. That looks very much like an illicit minor in the third figure. It might also be treated as a fallacy of composition. It would seem as though the "intellectualists" ought to have a little respect for formal logic.

If you say that in the above case pragmatism is not new at all, but as old as science, I would quite agree with you. No one more than the pragmatist has disavowed any intention at originality. It is better to be true than original. But the amount of dust raised seems to indicate that an old, implicit scientific procedure was but vaguely understood. If the result of this paper should be to convince my readers that they are all "pragmatists," then we shall have "peace on earth, good will to men" once more, than which no more blissful consummation could be desired, unless it be strife.

CHAPTER XI

Meaning and Validity

In dealing with truth we are concerned, not with the imagery of the thought process, but with the consciousness of intent or direction. This is the essential aspect of the meaning, the imagery is a means or by-play. This sense of intent or direction is a unique content, not analyzable into mere images and their elements. If so, the meaning would be a subjective compound, as associationism has always maintained. The image, whether concrete or verbal, is a way of fixating or making definite the otherwise vague intent. How far imagery is indispensable to the meaning process is a matter for psychological analysis to determine. The focus of attention may be alternately now upon the intent and now upon the imagery in varying degrees; and in some of the transitive flights of the process we may be so absorbed in the intent as to be oblivious of the imagery, while in other cases the focus may be just as surely some substantive bit of imagery which symbolizes the meaning. Psychology so far has emphasized the latter cases.

The relevancy of the imagery to the intent obviously varies with the degree the meaning is concrete or abstract. In the concept of humanity, color distinctions cannot be irrelevant. They are part of the concrete meaning. The meaning of a melody can be a true meaning only when it reproduces the melody, while Kepler's squares and New-

ton's equations must be regarded merely as artificial tools for fixating and communicating the meaning. In the hunt for a forgotten name, the throbbing, restless intent becomes even more important and the suggested imagery even more accidental. But whether the meaning is concrete or abstract, the intent-content is obviously the determining aspect of the process and the only aspect to which the truth conception is relevant.

With this passing notice of the concept of meaning, we must next try to fix the concept of truth. Here there is woeful need of differentia. In the first place it is well to keep in mind that truth and meaning are not coincident terms, as a good deal of the discussion of to-day seems to assume. Truth is only one species of meanings. Esthetic meanings, meanings of approval and disapproval, not to speak of the whole class of the more primitive perceptual meanings, do not involve the question of truth, and yet who shall deny that they are real meanings? The enjoyment of the symphony has meaning, as well as the testing of the hypothesis, but the meanings are quite different. What then constitutes a truth meaning?

Even within the universe of thought as expressed in language, we must distinguish the meaning of a proposition from its validity. Taking the proposition as a separate structure, we must recognize that it is only a datum for thought. In formal logic, we are not concerned with whether propositions are materially true or false. We investigate merely their internal meanings and their relations. In trying to understand another mind, we must first of all get his meaning, whether we agree to the validity of his opinion or not. We say: "I see what you mean, but ——." We recognize the meaning of antiquated theories of religion

and of science, of witchcraft and of astrology, though we no longer recognize their validity.

It may be contended that what we really mean is reality, and that, therefore, there can be final distinction between meaning and validity. This involves, however, an assumption, as regards our meaning and the object which we mean, that we cannot accept *a priori*. It may turn out that the object which we mean is only *more* of our meaning — our internal meaning enlarged and made definite in an inclusive, preëxistent, external meaning. But that this is so must itself be proven as the outcome of an inductive process. It seems to us, at any rate, that our meanings must mould themselves upon the carcass of reality by external observation and experiment, and cannot weave the tissue of the world merely out of themselves by implication, as the snail secretes his shell. For us, as finites, at any rate, the difference between what we mean and what is valid may involve a radical wrench to our meanings. To be valid, meanings must not merely be internally consistent and intelligible; they must lead to a reality beyond themselves.

If we use meaning in the sense of pragmatic meaning — the difference which a situation makes to our further procedure whether practical or formal — then there can be no final dualism between the meaning of a proposition and its truth. The meaning which moulds itself on the constitution of reality; which leads to the intended consequences, is precisely the *valid* meaning. But even here we must not forget that our internal meanings are provisional and that they become true, not because we mean them, but because they enable us to anticipate and control their object. This should prevent us from being arrogant about

Truth in the singular and eternal sense, because this is at best an ideal. What we really have, on any theory, empirical or rationalistic, are "truths," tentative leadings, halting meanings, which in part and darkly help us to take the next step.

There has been considerable confusion in recent discussion as regards the definition of truth. This has been owing in part no doubt to the unorganized state of pragmatism, but still more to its caricature by its critics. It is quite true that we cannot define truth merely as that which has useful consequences. Castor oil, too, has useful consequences under certain conditions. Nor is truth useful under all conditions; and a real criterion of truth must work all the time. It must give us point for point correspondence so far as the relevant features of the situation are concerned. We sometimes feel that we have to withhold the truth of his condition from the patient for fear of jeopardizing his chances at a critical time. A father probably would not thank a truthful neighbor for enlightening his son as to his father's not being all he is cracked up to be. A child's idealizing of his parent seems, on the whole, a good thing. Only in Leibniz's best possible universe or within the comprehensive maw of an idealistic absolute does it follow that whatever is is good, and therefore that the true and the useful coincide. In a world as pluralistic and plastic as our social world is, it may very well happen that fiction is sometimes better than truth; and in the absence of idealization most of us would shrink into rather bony shadows. Deception may be an indispensable means to social progress. The fact that the true and the useful so often coincide, and that the useful must largely furnish the inspiration for the true, must not

blind us to the contradictory instances, such a[s] the satisfying of curiosity or malice. Only the devil w[ould] tell the truth under some circumstances. Life is not [all] comedy. There are the tragic, slap-you-in-the-face truth[s], too, the utility of which lies at least beyond our ken. We cannot be said, therefore, to have defined the true by cl[assifying] it under the useful.

Nor do we define truth by stating it in terms [of] "satisfaction," even though satisfaction or fluency of s[ome] kind should turn out to be part of the nature of truth. I see no inherent wrong in trying to state truth in terms of our affective-volitional nature, as well as in intellectual terms, provided that our terms define. We are not concerned here with the question which is the more fundamental side — whether an hypothesis appears to agree because it satisfies or satisfies because it agrees; psychologically either may be true. Our intellectual perception influences our feelings; and there can be no doubt that our wishes and feelings influence our intellectual perception. They condition our emphasis and selection of data. Human nature is not divided into water-tight compartments. In either case we must speak in finite terms — what *seems* to agree and what *now* satisfies. One side of human nature has no more finality than the other. In the long run, no doubt, only real agreement seems agreement and only real agreement satisfies the truth demand. This would of course include the cases where our faith, our affective-volitional nature, is a creative factor in making the agreement come true, as well as cases where the facts are indifferent to our faith, "for who by taking thought can add one cubit to his stature?" But we are concerned now with *what makes an idea true.* And while the truth activity has, no doubt, its

characteristic tone of satisfaction, it is not this tone which makes the idea true. We have the satisfaction whenever we believe that we have attained the truth, though we are often mistaken, as shown by further experience. And we could not have a mistaken criterion of truth.

If we define truth in terms of satisfaction, we should at least state *what kind of satisfaction* or what sort of fulfillment of purpose, because otherwise we would not distinguish truth satisfaction from esthetic or moral or any other type of satisfaction. In these, too, we have selection, simplification and ideal construction; and yet these are not truth attitudes. What are, then, the differentia of truth "satisfaction," if we state truth in terms of value? It is not merely what our ancestors felt or what our great grandchildren are going to feel, nor is it determined by intensity or duration. It is not enough to state it as social value, because other types of value too are social. Nor must it be merely the satisfaction that truth leads to, because this need not be truth at all. It may be mystical trance or sleep. The value of truth is not simply its use, as some writers seem to hold; but the feeling which characterizes truth or accompanies the truth attitude. And this attitude consists in the termination of the idea, purpose or expectancy in its complementary facts, the agreement of the particular hypothesis or suspicion with the reality which it intends or points to.

To call this termination of search, this equilibrium of hypothesis or suspicion, thus terminating in evidence, "satisfaction," in the sense of a utilitarian good, needs qualification. This implies that truth is always an unqualified good. Yet in the uncertainty may lie the only hope, and never to know may be blessed. A man I know was a long

time in uncertainty as to the suicide of his son. The alternative hypothesis kept him up, but the hypothesis of suicide finally terminated in facts. The man became a permanent melancholiac. The only "satisfaction" of such a truth is that it puts a stop to uncertainty; that one dread alternative with its black emotion finally possesses the field. The intellectual "satisfaction" here runs counter to any moral satisfaction surely. It condemns the world as evil, so far as that individual is concerned. A man who has become addicted to opiates or passed through certain kinds of vice has a certain knowledge that the normal man does not possess; but such a knowledge is a doubtful good.

The "satisfaction" of truth, then, is a coefficient of the terminating of an idea in a certain reality which it intends or suspects, hopes for or fears. It may be good or it may be evil or it may be mixed. It takes its coloring from the nature of the situation — the idea and its termination. In general it simply means equilibrium after doubt or intellectual readjustment, a termination of search and uncertainty so far as that particular hypothesis is concerned. Truth value gets its tinge from this particular agreement or termination. To speak of such termination as fulfillment and satisfaction is born of the same undiscriminating optimism which exhibited the trophies at Delphi.

Even in using terms of expectancy, as I have above, I feel that I have overstated the subjective "leading" of truth, for facts may be forced upon our acknowledgment which we can neither be said to have intended nor suspected. They may drop from a clear sky. In our pluralistic, changing world we do not always have opportunity to plan for the facts nor even to suspect them. The facts sometimes select us instead of our selecting them. They

sometimes violate all our fundamental interests, outside of the cognitive. In the case of the news of our friend having perished in a railroad accident, the news does not come as fulfillment of purpose. If so, we ought to be tried for murder in the first degree. Truth here means chaos, the defeat of expectancy. The particular ideational setting here is selected or forced by the environment. In most human lives the unwelcome, unintended facts are probably as numerous as those planned for. Satisfied or unsatisfied, we have to accommodate ourselves to the new events. But if the hedonic value of truth is determined by the particular agreement of our idea with its reality, then the nature of this agreement with reality becomes the important thing to investigate for any real light on truth — its relation to its object and the manner of testing, rather than the hedonic tone of the psychological situation.

Is there an immediate test of truth, the result of the mere inspecting of a meaning or proposition and without any need of examining its relation to a larger world? There always will be people, no doubt, who will insist upon the *a priori* certainty of some propositions or axioms. But what do we mean by such certainty and what guaranty does it have? Some have found such certainty in the authority of the mystical illumination of certain moments. Even William James argues that such mystical illumination is authoritative for him who has the experience, even if not coërcive over others. But he also admits, at least by his illustrations, that such a feeling of illumination, whether artificially or spontaneously produced, may be the merest insanity. It would seem to be impossible, so far as the mystical states go, to judge between sense and nonsense; and therefore it is hard to see how such conscious states

can be authoritative or valid in their own righ
epistemological sense. They may be mystically
thetically satisfying and we may choose to abide
but that does not make them valid. The truth
states must be found in their being socially appli
their ability to meet and organize the data of wa
perience. A truth valid only for the one who ha
hardly be called truth. Rich as such states ma
emotional meaning; though they do transport the
ual who has them to the seventh heaven, yet
verified only as they agree with further experi
they permit of being translated into the prose o
life. Mystical certainty simply amounts to sayin
a man feels that way, he feels that way, though i
merest nonsense. Luminousness may be a par
truth experience, but it does not [illegible] it valid.

Others again have insisted, accor[illegible] to tempe
upon the dry light or upon the feeling [illegible] fitness
the categorical character of certain proposit[illegible]s, es
the mathematical and moral. But this intuitic[illegible]al
gorical certainty is simply another name for be[illegible]
thing. Our belief may have an instinctive basis o
be due to indissoluble association; but in either
does not *prove* anything, except that we have it.
the categorical vehemence of a Kant is not suffi
make traditional beliefs valid. The serious inroa
the mathematical axioms, especially Euclid's list,
seemed for centuries so categorically and dryly
should give us warning not to put our trust too im
upon traditional certainties. Axioms, after all, a
eralizations from experience; and however intuitiv
may become in the process of individual and race

they can be validated only with reference to the procedure of experience, individual and social. The *a priori* certainty of the law of identity and of the law of contradiction resolves itself into hypothetical tautology apart from experience. If a thing or meaning is the same, it is the same; and if it is the same, it is not other. Whether there is such a thing as identity or not must be determined by experience. Even our more positive "love for the wholeness of things," which is the root of scientific endeavor, is not valid except as it can be realized, however partially, in experience. The immediate inspection of our ideas, therefore, is not sufficient to establish the truth of those ideas, except as we are concerned merely with the Cartesian axiom of the *existence* of such facts in consciousness. It cannot furnish a final test of validity.

The impossibility of conceiving the contrary carries us no further. This is true in all real belief. A man recently told me that he was so steeped in the doctrine of the Trinity that he could not conceive anything else; yet on questioning him I found that the doctrine with him was merely emotional, and had no intellectual significance. Sometimes these axioms, the contrary of which cannot be conceived, have taken an entirely contrary form in different minds. Hence the antinomies which men like Zeno, Kant and Spencer have used to discredit finite knowledge. Thus one holds that reality must be finite, another that it must be infinite. One holds that it must be infinitely divisible, another that it consists of indivisible individuals or is an individual whole. One holds that cause and effect must be identical, another that they must be different, etc. Men like Spencer simply lie down and allow themselves to be buried by such venerable contradictions. Each side

of the antinomy retained its force for him, and so there was nothing to do but doubt his reason. And Spencer's reason was very inadequate. How many of such *musts*, the contrary of which he cannot conceive, a man has depends mostly upon his stupidity and lack of imagination. So far as mere logic is concerned, we must hold with the ancient Protagoras: "On every question there are two speeches, which stand in opposition to one another." The impossibility of the contrary appears only when we set ourselves a definite purpose, adopt a certain universe of discourse, formal or empirical, with its definite constitution. Thus conceiving the contrary of the law of consistency is impossible within the universe of truth, though we can conceive a universe — that of absolute dissimilarity or of absolute chance, — in which the law of consistency is not applicable.

Validity can only be stated as the agreement of an idea or belief with its reality. The idea may be selective of the reality or the reality may force the idea. The feeling may be one of satisfaction or dissatisfaction, according as the reality we must acknowledge fits or thwarts our conative tendencies, but 'tis true whether 'tis pity 'tis true or joy unspeakable. Nor does the psychological motive or interest, which prompts the search for the particular truth, alter the truth relation. Whether the motives for investigating the chemical properties of strychnine be those of inventing a superior tonic or of finding a new way of committing murder, the truth as regards the properties remains the same. It has sometimes been argued that, because the motive for seeking truth often lies in our affective-volitional nature, therefore the test of truth lies in the satisfaction of this side of our nature. But whether our motive for seeking

for truth lies in our instinct for gain, revenge or sympathy, the test is precisely the same as though the motive lay in impartial curiosity or "love of the wholeness of things." In any case, truth consists in the tallying, whether coercively or constructively, of the idea with its reality.

This agreement may be merely formal, if our cognitive purpose is merely formal. Our syllogistic reasoning is valid if the conclusion agrees, according to logical rules, with the premises. In order to have objective validity, however, more is needed than formal agreement or conceptual necessity. The novel, too, must be consistent. Nestor and Ulysses are beautifully self-harmonious characters. Truth, in the objective sense, must agree with a prior reality. Consistency with what? becomes the question. And it must be consistency with the reality selected or which selects us. This may be a philological root or a chemical substance or an earthquake. The scientific hypothesis is valid when it terminates in the experiences which it intends, when we must act *as if* it were true. Else it must be revised. But validity in any case means agreement, whether of ideas with other ideas, as in formal reasoning, or with facts of a perceptual and individual kind, as in concrete truth.

When the agreement can be shared with other egos, we regard the validity as to that extent corroborated. Truth is a social institution, if not at the time of its discovery, at least in the long run. We are entitled to no private laws of logic nor to any private perceptions. When, therefore, the argument or the experiment wins the agreement of contemporary investigators or checks up with social experience, our scientific nervousness is greatly relieved. Social agreement has often seemed the final test of truth.

Individual judgment seems insignificant, when pitted against the funded and approved knowledge of the race.

But the individual sometimes proves wiser than the society of his day. What social prejudice prevents contemporaries from seeing, the chosen one of Jehovah sees. And he takes his stand upon his insight — sometimes reasoned, sometimes quite intuitional. Truth, therefore, not only must seem to agree *now* with individual or social experience. Truth must agree with the future. Social agreement, owing to the variable and complex character of human nature, does not cover the whole field of the inner attitudes of the various individuals. The overtones of individual natures may vary vastly; and while the census tables deal with us on the basis of averages, the individual differences may be the more significant facts for the progress of the race. It is only through individual variations, such as the great geniuses of mankind, and their imitation by society, that higher social levels, intellectual and moral, are possible.

Individual and social selection alike are subject to selection by the future — to cosmic selection. While we mean what we mean, while our insight may satisfy us for the time being, this does not prove the ultimate validity of our present meanings. The historic method has emphasized nothing so much as the relativity of our finite view-points, individual and social. The evolutionary process, having set us our program by the categories which it has furnished, reacts upon our rational selection, transforms, eliminates or selects our individual and institutional purposes. The individual or social satisfaction of our meanings does not guarantee their survival, not even with universal agreement, at any one time. No axioms could have been more univer-

sal than the geocentric view of the world and that of "an eye for an eye and a tooth for a tooth." Yet even these have not proved permanent. The process is ever furnishing new variations and, in its growing social complexity, is enforcing new survival conditions. The old science becomes mythology and the old conceptions of fair play vandalism. An idea of meaning, to be absolutely valid, must be tested by passing through the sifting process of the stream of human natures. Each generation must add its proviso of time. It must not shackle the future. Our present formal demands, growing out of our instinctive and social heritage, must be treated as hypotheses, though not necessarily conscious of themselves, to be tested by the ongoing of human experience, individual and social. This stream of processes, moreover, is not a mere chance affair as regards its ultimate value and meaning, but is determined by an objective formal constitution of the whole universe. This I have discussed elsewhere.[1]

Thus cosmic selection, which is responsible for our tendencies and demands, reacts again upon the products of the rational process. It determines what ideals or purposes shall have a place in the process in the long run.

[1] See *International Journal of Ethics*, Vol. XVII, p. 454 ff.

CHAPTER XII

Truth and Agreement

Both realists and idealists have joined in maintaining that truth is *agreement* with reality. But they have failed to state the nature of this agreement. Is truth a duplicate of reality or is it merely symbolic of reality? If the latter, what is the *rationale* of inventing this symbolism? Dogmatic realism and dogmatic idealism alike fail to break up reality and so fail to show the different meaning of agreement, according as truth is a copying process or is an artificial device. I hope to make these problems a little clearer in this chapter.

I

The problem of correspondence was a simple affair for naïve realism, because naïve realism dealt with only one kind of stuff, one grade of reality. Whether it is a case of like perceiving like, as with Empedocles; or opposites perceiving opposites: cold perceiving hot; the light, the dark, etc., as with Anaxagoras, we still remain within the one nexus of changes. For both the idea, which strives to know, and the object to be known, are conceived as physical facts and the act of knowledge itself as a physical change. This is equally true of the effluences of Empedocles, the images of Democriatus, and the forms Aristotle and the Schoolmen, with the passive imprint which these forms are supposed to make upon the wax tablet of the mind. With a

sharp distinction between mind and body, which took definite form with Augustine and was revived by Descartes, the difficulties as to how one set of processes can make a difference to another set of processes thickened. So we have the terminism of Occam and the phenomenalism of Hume and Kant. There can, on this view, be no real imitation by knowledge of reality, for knowledge moves within a world of its own. It is at most a sign language. We can know nothing about the real world. We know it only as it terminates in our subjective sensations and is elaborated in our experience. There can, however, be phenomenal verification or anticipation within experience. The world of shadows, also, to use Platonic language, has its uniformities, which make prediction possible. If we are doomed to the world of shadows, we can at least get ready for future shadows.

Idealism, in insisting again upon one kind of stuff, *i.e.*, mind stuff, tries to return to the original simplicity of like acting upon like. So long as the question of the ego is not raised, the problem is easily stated as merely purposive realization or logical connection within one context or unity of thought. When the question is raised, however, as to whose experience or unity, the problem grows more difficult. The idealist must either raise himself into a solipsistic absolute or, in modestly recognizing his own finitude, face the dualism of an internal and external meaning, and struggle over the seeming fragmentariness and darkness of our world.

A new theory of knowledge has been developed in recent times by William James and others, which tries to avoid the idealistic difficulty and presumption by treating knowledge as merely an instrument having no relevancy

to the object to be known, but being valid in case it can be exchanged, in the course of the process, for immediate experience, as wares are exchanged for gold. While such a theory, with abundant illustrations from natural science, accounts for how knowledge can control the world of processes, it leaves us in the dark as to the real question — the relevancy of knowledge to its object.

II

Before we can have purposive selection and correspondence, our selection is determined by our instinctive tendencies. The infant does not have any definite program; it is not as yet a self and so is not concerned about self-realization. It is so constituted, however, as to respond in characteristic ways to certain stimuli, such as moving things, bright things, loud things, things to eat, to grasp, to be afraid of, etc. There is no question of intention here and therefore no question of truth. The infant, as the result of the evolutionary process, is such a slot as can be set off by just such pennies. What adaptation, fitness or correspondence to its environment there is, *means* fitness or correspondence only to a more developed stage of experience. Its movements do indeed show a certain degree of adaptation, its sense-responses may be said to correspond to stimuli of so many vibrations per second. But they do not mean correspondence to the infant.

Agreement *means* agreement only when we intentionally select in the realization of a certain purpose. Only then does truth or error exist. If I point to Peter when I mean Paul, to white when I mean black, I have failed to carry out my intent and so have erred. To correspond or agree means to realize my purpose or at any

rate to be able to act as if my hypothesis were true. Correspondence, however, has a twofold significance, the *instrumental* relation of the knowing attitude to its object and that of *sharing*, to use a Platonic term.

In so far as reflective thought sets its own conditions, irrespective of the inner meaning of the processes to which it refers, aiming simply at prediction or control of the object as a means to its own purposes — in so far thought is instrumental. Whether the object itself has any meaning or not, such meaning or claim is ignored. And thought must always be instrumental when it deals with that which is immediate and which, therefore, is transformed and done violence to in being dealt with reflectively. This is equally true of brute immediacy and of immediacy on the higher esthetic level, which presupposes thought life. If reality, therefore, in its ultimate meaning must be conceived as mystical appreciation, which passes knowledge, as the mystics from Plotinus to Bradley have insisted, then knowledge would always need to be instrumental. Again, in bringing our categories — the result of our instinctive equipment and social, historic setting — to bear upon the sense material which furnishes us with our data of nature, with its coëxistences and sequences, we can hope to have only instrumental knowledge. We cannot agree that because nature can be made to realize purposes, it is itself purposive; any more than because a knife cuts meat, it must itself be meat. It must indeed be something, *i.e.*, it must be capable of making predictable differences to us. But we cannot treat it as purposive. If there is purpose governing nature, it must be extra-natural, determining survival. The old idea of correspondence, which Kant subjected to such searching

criticism, deals with this relation of the concept to the non-reflective or physical world. Here it is easy to show that there can be no internal correspondence, or copying of meaning, as the processes which we investigate have no inwardness. We make the conceptual system of nature—unify it, in obedience to our tendencies, on the one hand, and the data of immediate experience, on the other, so as to meet the requirements of the environment and, so far as possible, control it for our needs. We are here limited to the external continuities and qualities of nature. We cannot acknowledge things as having a halo of meaning or value of their own.

Sometimes even knowledge of ideal objects is legitimately of this instrumental kind. Treating the circle as made up of infinitesimal straight lines, though convenient, does not correspond even with our ideal reality. The census tables do not correspond to any real order. They are sorted facts for an artificial purpose. Sometimes we ignore the claims of the reflective consciousness, because we regard it as criminal or pernicious to our standards of truth and right. But sometimes we ignore the claims of other meanings because of our moral blindness. The cardinal crime, the crime of crimes, as Kant has shown, is to neglect the inner significance of our fellow-man and to treat him merely as a thing. What we respect as having a claim on its own account must differ widely, too, in different stages of development. For the savage, what is outside of the tribe has no meaning which needs to be respected. On the other hand, nature phenomena, ghosts, etc., are treated with more than human respect. In general we find that it is easy to recognize a meaning if it agrees with our own, but difficult the greater the divergence.

Knowledge may be instrumental, then, for two reasons. It may be instrumental because it belongs to another order of reality from the object it strives to know. It may be a systematic arrangement, in the service of our purposes, of facts which themselves *know* no system. This must hold wherever science deals with non-reflective facts, as in the physical sciences. It holds of the psychological sciences, too, when they are not dealing with processes of the reflective or meaningful grade, or when they are decomposing the reflective attitude for purposes of naturalistic description. In so far as our analysis and reconstruction must always fall short of the real object, all our knowledge becomes infected more or less with the instrumental character. We can never, in our description, give the complete equivalents of the real gold or the real Socrates. This can be only when our purpose creates its own object. Else we have to be satisfied with such aspects of the situation as will suffice for the leading of truth.

III

Some objects of knowledge must be recognized as having a meaning of their own, a rational purpose and value, which we must acknowledge. Even here, knowledge, to be sure, must be in some degree instrumental, as we have seen; but this is only incidental, a stage in the process of sharing or sympathizing with the object. The problem here is no longer one of mere manipulation. The correspondence here cannot be exhausted in the one-sided relation of hypothesis to immediacy within the process of individual experience. The judging attitude here is a different one from that of means and end. The fulfillment of our purpose here is conditioned upon partaking of an

extra-individual realm of meanings, respecting and sympathizing with them. We do not want to make over or control Shakespeare's Hamlet or the Sistine Madonna or the friend that we love. We want to understand and appreciate them. Our knowledge, when it is concerned with social or ideal structures, is primarily of this sharing character. It is not the business of the historian to make over the past, but to understand it or share its meaning. Even when our aim is that of the practical reformer or when we must revise the scientific hypothesis, it is first incumbent upon us to understand or share the ideals which we would revise or reinterpret. To fail to recognize in the universe any purpose but our own, is to be a bore or a criminal. Some individuals must be respected as having a meaning of their own and cannot be treated merely as things, if we would live fairly and, in the end, accomplish our purposes. To be sure, our limitations as finite beings and as part of the time-process makes such sharing difficult; but it remains, nevertheless, a real aim. Plato has a word for us, as well as the modern instrumentalist.

In instrumental knowledge, as we have seen, the question is merely how the facts *seem* to us; how they can be controlled by us; whether our concepts terminate in perceptions. Not so in the knowledge of the sharing type. Here the truth attitude is not merely an artificial tool, like an astronomical ellipse or a census table. It is not a piecemeal selection of external qualities and relations which are serviceable as leadings to the concrete processes which we strive to anticipate and control. We must imitate, not merely externally, but share and acknowledge, soul confronting soul, the individual's own meaning in its unique wholeness. Only when social communication of

mind with mind results in such sympathy and copying do we have real knowledge of selves. In so far as the knowing attitude here can be completely realized, it is no longer *of* reality; but it *is* reality. To know the meaning of Hamlet is to have the reality of Hamlet. Leibniz's monads are a splendid illustration of a universe which might exist in many copies.

To be sure, here, too, the concept or hypothesis must terminate in immediate experiences, present or future, within our individual history. But these become signs of another reality, which we strive to reach. We do not stop with the external characters — the printed words or spoken sounds. These become symbolic merely — carriers of the meaning. The difference in the two attitudes may be said to be a metaphysical difference, *i.e.*, a difference as regards the ultimate intent of the knowing process, rather than methodological. The finite test of the correspondence in either case, the test available from moment to moment in individual life — whether in knowledge of the instrumental or sharing type, is an internal test or the corresponding of our purpose or hypothesis with the ongoing of experience. It means an attitude of fulfillment or forced acknowledgment in this ongoing.

The knowing process, when it deals with psychological unities, is really valid only when it reproduces or copies the object, *is* the nature of the object. The only valid hypothesis about a reflective object is the attitude that acknowledges the meaning of the object and succeeds in sharing it — aims beyond sense-experience at its metaphysical reality. Whether this aim or intent is true or not must be tested, as in the instrumental case, with reference to further experience. But this attitude, if true,

terminates in sharing **and not in mere perceptions and their uniformities. Another center of experience is acknowledged, which has put its prior stamp upon our self-stamped facts. The attitudes in the cases of sharable and non-sharable realities are built out in different ways; the former has over-beliefs that the latter does not have, and so requires a different verification — a verification including the over-beliefs. When such sharing is impossible we must be satisfied with such artificial or phenomenal correspondence as the uniformity of our perceptions makes possible.**

IV

This theory of copying must be distinguished from the theory of the cinematographic copy of the flux of the universe, advanced by Henry Bergson. In the first place, the copying of which we are speaking is a real imitation of reality. We follow its stages of cumulative meaning as revealed in another mind history or its products. In the second place, the cinematographic copy, at best, would be cumbersome and useless, even for practical purposes. It could furnish no leading to the will in the bewildering multitude of facts. Truth, on the contrary, is an active, selective attitude on the part of the mind. It must single out characters or identities from our concrete changing world and thus enable us, in a degree, to anticipate its flow. And the contents, thus selected, must be a genuine part of the real world to enable us to dip into the process and predict its conduct. They are the warp, which enables us to follow the many-colored woof of life. As abstractions, in the service of the will, they seek and point to their context.

Nor do I have any sympathy with the dualistic type of

realism which would make our states of consciousness duplicates of the real object outside. The assumption of such duplication has always proved fatal to knowledge. And it is gratuitous in fact. Sensations are not copies. They are a subjective way of taking certain continuities of our psycho-physical organism with its objective world. Neither are our images, as such, copies. They are relatively persistent processes of experience, modified by intervening rearrangement. They become representative when they are the same in more than one context, and, therefore, when excited in one context, suggest another context with its dynamic coefficient and time value. The copy theory of sensory processes can have meaning only when we assume a social consciousness in which, as states of consciousness, they preëxist, as for example Berkeley supposed. But such a storehouse is quite superfluous. We can acknowledge nature as having a context of its own. And there is nothing phenomenal about nature, if we take it at its face value, as it appears in experience, and do not attempt to read our human purposes into nature.

It is only in sharing *meaning* that concrete imitation — the copying of the object's own fullness — can come in question. And here the truth meaning has peculiar advantage over other meanings as its characters are already few and universal. To share Euclid's geometrical system is not only possible, but comparatively easy. And when we do understand it, we have Euclid's thought. There is no residuum so far as truth is concerned, whatever fringe the thought may have otherwise carried in Euclid's mind.

Realism has always insisted upon the trans-subjective reference of the cognitive meaning. But the paradox, often

pointed out by realists themselves, that the object must be both in and out of experience, must remain an absolute mystery so long as we deal with meanings as subjective pictures, inclosed within the magic circle of an epiphenomenal consciousness. This paradox is ignored, not solved, by having recourse to mystical or esthetic theories as regards the continuity of the meaning with reality. If we, however, regard the universe under the conception of plural energetic centers, which can figure in various contexts, including our cognitive context, and some at least as having a meaning of their own and capable of entering into cognitive relations with us; and if, furthermore, we regard cognitive purposes as themselves energies, evolving in complexity with, and having survival value through, their control of other energies, such as the physiological, then the paradox is resolved even if the practical limitations remain. We have at least found a motive for our ideas seeking agreement with their intended reality, for successful adjustment in the end depends upon such agreement. And our only key to external reality is what we must take it as, in the realization of our purposes.

The object, in any case, is more than our intent. It belongs to its own context, quite independent of whether it figures in our cognitive context or not. If the drama of reality consisted only in a series of doubts, readjustments and satisfactions, then Plato's subjectivistic interpretation of Protagoras would indeed be true, that "to whom a thing seems that which seems is." But in that case what need could there be of readjustment within the stream of experience? Why should not the meaning at any time exhaust the situation? Why should there be failure or the necessity for accommodation to a larger world? Evi-

dently the meaning does not exhaust the reality of the object.

This inadequacy of the internal meaning to constitute its own object can be shown equally well on the level of sharing as on that of instrumental knowledge. Is Ibsen's meaning made or created in each stage of the process of the reader's interpretation? Is not the object here something preëxisting and external — not made by the critic? And must not the critic's meaning conform to this in order to be valid of Ibsen's meaning? By ideal construction we try to reproduce for ourselves the meaning of Ibsen's play. We gather data accordingly; but the truth we have first when our meaning imitates the other meaning, when it gives an adequate copy of the other meaning. In such a case the idealists are quite right that the agreement must be with truth, an objective constitution of truth, and not merely with immediate experience. I cannot, however, see what agreement with truth can mean unless you assume that the object itself is a truth process. If the universe as a whole is truth, a system of experience, then of course all truth ought to be a copying of truth. But I do not think this has been proven. Stringing nature on our reflective unity does not make nature a reflective unity. There is, in so far as we know, no truth or system in nature. Nature only furnishes certain changes, interactions and constancies which we can seize upon and systematize to suit our needs.

The immediatists themselves have fretted a great deal lately at their misinterpretation by others. But why should they fret? Their critics, realists and idealists alike, seem to be satisfied with their interpretation; and that is all the immediatists ought to ask. If they say that the

critics ought not to be satisfied, they have evidently insisted upon a reality beyond immediacy and something besides subjective satisfaction as the test of truth — upon correspondence with an objective reality.

V

We never shall have a true theory of knowledge until we recognize the complexity of reality in its various stages. We have seen that those who have made the knowing attitude exclusively instrumental have borrowed their illustrations altogether from the physical part of reality. They talk about knives and chairs and chemical formulæ. They are apt to ignore another part of the environment, which to a human being is at least equally important with the physical, viz., the institutional. Could the object be treated altogether without any reference to any purpose or meaning of its own, then the instrumental theory would indeed cover the field. Were reality through and through reflective or conceptual, on the other hand; must we acknowledge it as one system of meanings, then Plato and all his disciples would be right, that all knowledge in the end must be expressed in terms of sharing or imitation — a copy of the inner meaning of the processes at which truth aims. In so far as it should succeed in this, the distinction between truth and reality would disappear; the idea would *thicken* into being. As it is, it is both sanity and fair play to treat reality as its nature demands, instrumentally, where no purpose need be acknowledged; sympathetically where the conditions so demand.

Whether a man shall be an idealist or a materialist is not a matter of consistency, but of claims which we must meet. Where we must recognize ideals, as in dealing with

the institutional life of the race, we must be idealists. Where our ideals have no inner relevancy to the processes with which we deal and the aim is merely control, we must be materialists. Here a one-sided *a priori* consistency is as mischievous as in other departments of life. To institutionalize nature by giving it reflective life and ideals of its own is to leave evidence for fairy tales. To ignore purposes and meanings, where we ought to understand and meet them, is to show one's lack of imagination and unfitness for social life. Thus the truth of Plato, as well as of Kant and James, is recognized. The one-sidedness of the instrumental theory consists in ignoring that part of the environment which is institutional; is itself meanings or ideals. The one-sidedness of Plato and his followers is that they attempt to institutionalize nature as well as man.

The instrumental theory does not satisfy the claims of the successive moments of each individual life any more than it does the social claims. It is not fair to regard each moment of appreciation or reflection as a mere instrument to another moment. If each moment has no significance or worth of its own, is a mere instrument for meeting a future moment, then life as a succession of moments can have no significance. Instrumentalism, bare and simple, must lead to bankruptcy. Each moment must be respected as end, as well as means. Every genuine moment is a thing of beauty and a joy forever, as well as the parent of a new moment. And again, every false and perverse moment is a tragedy never remedied, as well as a call for reconstruction, if there is such a call, or an obstruction to further living. The universe, in other words, is not merely fluid. If it were, it would be nothing. Each

moment and each stage of life is an individual reality with its own warm and living meaning, to lose which is to lose all.

The confusion in recent discussions has come in part at least from the failure to distinguish between truth and reality. Truth is our version of reality. The geological ages existed as characters or processes of reality long before we discovered them, but the truth about them did not exist before we discovered them. It is nonsense to speak of an hypothesis, which is our meaning or attitude, as true previous to verification; but previous to verification there exist certain conditions, which make some hypotheses come true. These conditions, in most cases, are not altered by our hypothesis. The chemical properties of gold are not altered by our faith; the condition of our nerves may be. The "laws" of nature are contributed by the man who discovers them; and science very properly, therefore, deals with the laws biographically, as Newton's law, Carnot's law, etc., though once discovered they become social and eternal. Nature furnishes existences, uniformities of various sorts, but no laws, no truth. These laws or expectancies become true when nature behaves in the predicted way. This is all that correspondence in regard to nature means. It is not a one to one correspondence, as we only hit at best a few aspects of reality; and only a few are significant for us. Truth, looked at from the individual point of view, becomes agreement with truth, when we imitate or make our own truths already existing, hypotheses already verified, social truths. Here we do copy truth, within the limitations of human nature. Truth need not mean, and cannot except to a small extent mean, individual verification. An hypothesis or law is true, if some one has really verified it. Going

over it again in such a case does not make it true. It simply relieves our nervousness and confirms our belief. But our belief or doubt neither verifies nor undoes the verification of an hypothesis, though it may furnish a motive for testing it.

As I see it, both the intellectualists and the anti-intellectualists have contributed to the confusion—the intellectualists by tacitly, often unintentionally, assuming an absolute system of truth with which we must agree; the anti-intellectualists by their intense individualism in practically insisting that truth is not truth, unless it has passed through their particular cranium. Of course a truth is not *my* truth unless I make it my own by going over its grounds, tracing it to its termination in the intended facts. But going over an hypothesis already verified does not make it true or valid. This is a social fact. Whether I make it my own or not is tremendously significant for me, but is not, unless I improve upon the hypothesis, a contribution to truth. Whoever the legatee or individual producer of truth may be, it is quite sufficient that truth exist in one individual consciousness, as his systematic meaning, whatever the other individuals may mean. If everybody should sleep the sleep of Endymion, there would be no truth. If, on the other hand, there is an omniscient, ever wakeful God, his possession of the truth would give it all the *validity* that its possession by billions could possibly give it. The question in any case would be, Does it terminate in facts? Does it, as judged by either past or present or future experience, or all of them, meet the reality we intend or which is forced upon us?

CHAPTER XIII

Human Nature and Truth

In this chapter I wish to discuss three problems: the meaning of humanism; the relation of motive to validity in truth seeking; and finally certain limitations of human nature in its search for knowledge.

I

It is universally recognized now that we must arrive at truth through our human purposes, as the fulfillment and definition of human striving. We can know nature only as it runs through human nature.[1] But we must distinguish between coming to light through our human nature and being dependent upon, or created by, human nature. Human nature with its purposive selection determines the *meaning* of the object, but does it, as cognitive, determine the *existence* of the object? Furthermore, while truth, in the nature of things, must be man-made, must be arrived at through human processes of perception, imagination and thought, does that make truth, once arrived at, human?

In answering the latter question first, we must maintain that if truth works, it is no longer peculiarly human. The necessity which makes our thinking objective lies not in us as human, but in the structural conditions of the universe

[1] This has been brilliantly emphasized by Dr. F. C. S. Schiller, especially in his book "Humanism."

which we must meet. If animals have sense perception, and imagination, as the higher animals certainly have, there is no reason, so far as the evidence goes, to think that their perception, or the laws of their association, differ fundamentally from ours. If they could also reason, there is no need for assuming that their laws of thought would be different from ours. If there are supra-human beings in the universe, we must assume that the same rules of logic and the same scientific uniformities hold for them as for us. We cannot think of them as having another law of contradiction or another law of gravitation. Truth is, strictly speaking, no more human than it is Aryan or Negro. In any case, truth is a relation between the idea and its intended object. It is proven true when the idea terminates in its intended consequences.

Another theory, however, has been proposed by eminent thinkers, as regards the relation of truth to human nature. It has been held that human nature determines, in part or altogether, the nature of the object which is known. According to Kant, human nature, on the one hand, greatly modifies the object in the way of sensation — the character of the sensation being due far more to human nature than to stimuli. On the other hand, human nature contributes the system of relations in the way of space, time, causality, etc., and thus constitutes the unity of nature. Other philosophers, while not consistent in the working out of their theory, have gone so far as to make the existence of the object dependent altogether upon its being taken account of by human nature. Thus, barring the tacked-on assumption of God, in Berkeley's system, the reality of the object is made to consist in its being perceived. Fichte in a similar manner, would make human nature posit both

the system and the existence of the datum itself. In neither case, however, has the hypothesis been worked out consistently. Berkeley has recourse, in the last analysis, to God as the storehouse of perception, while Fichte takes refuge in the positing by an absolute ego.

What does human nature contribute to nature? We must agree with Kant that human nature contributes the *significant* system, or the cognitive relations, to nature. Nature has no significance on its own account. In the cognitive sense, it is true that we make the unity of nature. We furnish the conventional units, by means of which we take stock of nature's energies. Our yardsticks are our measures. Our mathematical equations and our syllogisms are our human contributions. They are our tools for the description of our perceptions. They must be justified by their convenience, as such human tools. Nature knows them not. The selecting of certain aspects, the abstracting of these from their concrete setting, our construction of hypotheses — these are human activities, the result of the human interest, which we bring. But while we admit that human nature is responsible for our cognitive system of nature, we cannot on that account hold that human nature unifies or connects arbitrarily. It does not constitute the existential connections of nature. Our human unification must in the last analysis tally with the coëxistences, sequences and interconnections in nature. Our conventional measures of distance, or of time, or of weight, do not constitute the objects with which they deal — the existential relations of distance, or time, or weight. Our equations must be capable of dipping into the real stream of concrete experience in order to be valid. The coëxistences and uniformities of nature are not made by our perceiving them, though

they become significant for us, when they thus become conscious. Nor must we suppose that stringing the facts on the unity of our consciousness makes nature itself an experiential unity. Whether nature is such or not must be determined with reference to the demands of our conduct towards nature. What human experience contributes is significance. It does not contribute existence.

Existentially, nature must be acknowledged as being what we must take it as, in varying contexts. Of these contexts human nature is one. Through its organic differentiation, human nature, no doubt, conditions the existence of some qualities, such as tone and color. Other qualities, again, such as form, weight, size, temperature and resistance must be taken as existing in other contexts besides the organic context. If we take relations, again, here, too, it holds that some relations, such as similarity and difference, fitness, consistency and proportion, must be regarded as relations to human nature, while again other relations, such as distance and causality, must be taken to exist independently of human nature. As values mean satisfaction and are conditioned upon the realization of the will, they cannot exist independently of conscious, willing beings. But, in any case, human nature as *cognitive* does not make the qualities, relations, or values. It only makes them significant for us. Even our own past meanings and the meanings of others must be taken as existing independently of the cognitive moment.

Human experience, moreover, has its own laws of connection, its own history, quite independent of the object of which it takes account. While the condition for our taking account of causality is doubtless, as Hume pointed out, the law of habit, the causal connections need not, therefore, be conceived as subjective habit. Our processes of

becoming conscious of nature may have nothing to do with the behavior of the facts which we intend. Thus, while our synthesis of the properties of the chemical elements, of the parts of a geometrical system, takes place in time and may require ages of successive experiences, the chemical elements and Euclidian geometry may remain constant. While our meanings change, they may refer to relatively stable qualities, relations and values, on the part of the object. Again, while our meanings may remain comparatively constant, they may refer to a world of infinitesimal succession as regards their object.

Our ideals, no more than our facts, can be regarded as the mere functions of human nature. On the contrary, human nature in its striving must own these ideals as obligations or limits. This is implied in every endeavor for truth, right or beauty. The world of experience, as we find it, must be criticized, selected and reconstructed in order to fulfill our ideal demands. These, therefore, must be regarded as part of the objective constitution of our world.

II

We must distinguish, in the second place, between the motive for seeking the truth and the test of truth itself. Considerable confusion has arisen from the failure to make this distinction. The two need not be identical. The motive for truth is always to be found in our affective-volitional nature. The test of truth may be quite independent of our feelings and desires. It would at least be as true to say that our affective-volitional nature is the bane of truth, as to say that it makes the idea true. For our will-to-believe often makes us incapable of seeing the objective agreements and

blinds us to the real facts. Hatred and love make it alike difficult to estimate human motives for what they are. Only the pure in heart can see. The only way in which our affective-volitional nature can influence the agreement of an idea with its object is in those cases in which our will alters the situation; where our will-to-believe is an important condition in the events coming to pass. It is reported of Charles Lamb that he refused to admit that two and two make four until informed what use was going to be made of it. But the relation involved in the equation, any one must see, is quite independent of any ulterior motive. The motive of Mme. Curie for investigating radio-active substances may have been loyalty to her husband, but this does not affect the truth of her investigations. The validity of Hobbes's contract theory does not suffer from his motive to defend the divine right of kings. The discovery by Columbus of a new continent is not affected by his search for a passage to the Indies.

On the other hand, we must keep in mind that no truth is possible without interest — without the fringe of the associative context with its affective tone. We cannot have the seeking for truth in a merely neutral way. It presupposes more than a *tabula rasa*. The impartial spectator, in the case of truth-seeking, is not a spectator void of interest, but a spectator with an *objective* interest in the situation. Truth must always be the fulfillment of will, whether this will be divine curiosity or the will to know for some practical end; and it is most effective when we have a passionate purpose, provided, of course, that purpose is to discover the real agreement involved, and not to pervert the truth relation.

Truth is not the whole of the mental situation. It is

only an abstract part of it. It does not have to do with its indoors and out-of-doors, its likes and dislikes, its ambition or failure, with the peculiar imagery, whether visual or some other type; but with the pointing or leading of an idea to a certain object, just as money may be of paper or silver or gold, may be carried in all sorts of ways, handed over under all sorts of emotional circumstances, but is valued because it passes.

What, then, constitutes the validity of truth? We must not, as has sometimes been done, confuse the meaning of a proposition and its validity. We may understand the meaning, clearly and distinctly, of Thales' hypothesis, that all is water, but that does not have anything to do with the validity of the proposition. Truth, as pragmatism has emphasized, must be tested by its termination in the intended facts. If we define truth as agreement with reality, this means in the last analysis, not agreement with reality in general, but with the experiences connected with its intended object. The intent must terminate in its selected facts. An idea which cannot be thus verified in the ongoing of experience, either by becoming directly continuous with our perception or by indirectly making such a difference, either to the facts that can be perceived or to our emotional-volitional nature, that we must assume it — such an idea lies outside of the domain of truth. We cannot say that truth itself consists in its consequences, because truth involves constructive imagination, with its formal demands, as well as data. But we may say that the *test* or *evidence* of truth consists in consequences, in our ability to take our objects in actual procedure as pictured by our idea.

Some recent writers have used two criteria in determin-

ing truth — that of termination in facts, or the scientific criterion just given, and that of the good, or the practical criterion. In either case, the truth is held to work. According to the optimism of these philosophers, the two coincide — that which agrees with facts is always the good and *vice versa*. No doubt, in the long run, the two coincide, but not necessarily in any finite span; and correspondence *in the long run* cannot be regarded as an adequate test of truth. In some fields of human experience, however, as in the case of ethical, esthetic and religious realities, the only criterion we can use is that of satisfaction, of the good. The consequences which we must use as tests in the case of religious reality, as in the case of all spiritual realities including social unities, cannot be consequences of immediate perception, but must be practical consequences — consequences as regards the coherency and effectiveness of conduct, the appreciation of beauty, etc. If we must act as if such realities exist, then we must also regard them as real. But truth, in any case, whether taken in its strict scientific sense, or in the more practical and proximate sense of religion, is always a plan of procedure. The supra-human world, as well as the infra-human, must be judged by what we must take it as, in our developing experience. The concept, in either case, must lead to definite conduct toward the intended reality; and the conduct must bring the expected fruits.

While we must distinguish between the affective-volitional motive and the conditions which truth must meet; while our feelings and desires do not, except where they alter reality, make ideas true, we must not forget the fundamental unity of human nature. We have seen that it is not necessary that truth should be cold and unemotional.

It may, and when actively pursued does, glow like the Holy Grail. The truth seeker may have the religious enthusiasm of a Plato or a Spinoza. The truth process itself must be regarded as a satisfaction of a fundamental demand of human nature, and, as such, must be regarded as a good. It was Plato who said, "the discovery of truth is a common good."[1] It is also true, as Plato pointed out, that the search for truth is a noble search, and requires a noble nature. Both Plato and Lotze have likewise recognized the esthetic value of truth itself, with its simplicity and unity. Human nature in its realization can be seen to be fundamentally one, and the realization of the true must be seen to be fundamentally bound up with the right and the beautiful, and all to be species of the good; yet this does not prevent us from recognizing certain differentia in this ultimate good. The good always means proper functioning on the part of human nature in its various relations, the harmonious activity of all its activities or capacities, fluency of life, consistency of transitions. Now this is true of the right and the beautiful, as it is of the true. The right means fluency of functioning, as regards human individuals in their institutional relations, the proportional equalization of claims. The beautiful means the harmonious and complete expression of our esthetic demands, the feeling of fitness and support as regards the various parts of the esthetic object. Truth means the fluent termination of the clear and distinct idea in its intended facts. In the equilibrated life of the individual as a whole, all human nature — cognitive, volitional and emotional — must function with ease and fluency of transition, without conflict of the true with the beautiful or useful,

[1] Plato, "Gorgias," § 505.

or the ethically good. They are, nevertheless, *specific* forms of the good; and, in our imperfect finite development, there may be provisional conflict.

III

While we must know through human nature — by means of its interests and tools, it has long been pointed out that human nature works under certain limitations. In criticizing human nature, however, we must be fair. We cannot, for example, regard it as a limitation that we must know by means of human nature as such. We cannot contrast the process of human knowledge with another mode of knowing, to the disadvantage of the former, for it must be evident on reflection that we have no other mode of knowing excepting human nature, and that any supposed supra-human method of consciousness must itself be an abstraction from the method of knowing as we find it in our own experience. The institutional mode of knowing, which has sometimes been attributed to a superior being, is, as a matter of fact, a genuine method of experience in ourselves. It is a short cut for long processes of association and thinking of which the immediate intuition is the accumulated meaning.

Nor can we criticize our human knowledge, because we are a part as knowers of a context of history, social as well as individual. There would be no knowledge at all unless we had the advantage of the cumulative experience of the race as assimilated in our own learning process. All our orientation to reality must be with reference to such a social context. We must imitate the social heritage of the past, before we can make any intelligent contribution of our own. Nor can we start on our journey of discovery

without such instruments as concepts or hypotheses to steer our course. Knowledge cannot be a mere passive accumulation of impressions. It must be an active sorting on the basis of certain suggestions that are derived from past experience, individual and social. All we can demand is a willingness to revise our suggestions in accordance with the demands of our procedure.

We cannot, however, as some have recently maintained, rid ourselves, at one stroke, of all the problems involved in the relation of the object to human nature by assuming that consciousness is diaphanous. It is quite true that consciousness in the abstract, *i.e.*, as the bare condition of awareness, does not alter the facts or their relations. But the process of knowing involves more than the bare fact of awareness. It involves, fundamentally, the problem of interest. And it is in the nature of interest that we find both the conditions for knowledge and the limitations of knowledge. We have already discussed the former. We must now say a few words about the latter.

There are first of all certain limitations due to our biological heritage. It was pointed out as early as Locke, that the sense qualities, furnished by the end organs of our organism, are by no means exhaustive of the possible range of sense qualities. Evolution has been interested primarily in furnishing certain practical guides to conduct. It has had no care for completeness of such sensory reactions. The program of human interest must therefore be worked out within the limitations furnished by our sense instruments, and such artificial means as we have found for the extension of these in the way of telescopes, microscopes and other instruments.

Coming to the problem proper of the nature of interest, we must remember that human nature is fundamentally instinctive and impulsive, and that our interest is throughout determined by this instinctive mental constitution. There are, in the first place, probably some racial differences due to this instinctive heritage. It is true that it is extremely difficult to make out just how much must be attributed to fundamental race difference. We know now that a great deal which we once attributed to race difference can be accounted for as due to social suggestion and imitation. Not only is this true of certain mental characteristics, in the way of customs and traditions, but it is true also of certain physiological characteristics, such as peculiar gestures, bearing, mien, and facial characteristics. The peculiar gestures of the Hebrews and Italians are due merely to the imitation of tradition, and fail to stick in a new social environment. Our so-called race problems are largely due to the blindness of social prejudices. The southern baby manifests no antipathy to its colored "mammy." The fashionable lady is not troubled by the supposed race odor of her colored coachman. Some of the finest loyalties I have known have been between Jews and Anglo-Saxons. For all that, however, I believe that there is a fundamental difference in genius, due to difference in race. It is no historic accident, I think, that the Hebrews have given us the most fundamental story of religious insight and devotion; that the Greeks have given us a new appreciation of art and science; that the Hindoos have contributed an interesting type of pessimistic mysticism; that the negroes have given us the characteristic southern folk songs. In the long run, this instinctive genius of the race dictates its type of contribution to social institutions; constitutes the

race or nation a chosen people; conditions the peculiar gift which a people brings to the world's civilization.

This race genius constitutes necessarily a limitation of appreciation. The Greeks could not appreciate the sense of holiness of the Jew. The Jew in turn could not enter into the free world of Greek creativeness in science and art. Even when we rise above mere brutal prejudice, such as the ants probably feel when irritated by the odor of another species; even on the fair ground of competition and sympathy, race differences, while they exist, probably constitute certain limitations in the way of human blindness. They require an education in tolerance and appreciation. While again a large number of human beings adopt Christianity, each race has made it over and must translate it in terms of its own genius. The reason for the permanency of the geographical line between protestantism and catholicism in Europe lies in part in temperament and mental constitution due to race.

When we pass from the race to the individual, through whom, in the last analysis, the various streams of energy must pass in order to be known, we must bear in mind that the individual is no bare logic machine for grinding out certain mechanical results, but that he is fundamentally will, a bundle of tendencies and emotions. However we may conceive of individual beginnings, whether individual consciousness is a migrating soul through the ages, or a creative act on the part of the world process, as we find him at any rate, he is a unique center of energy, with important emotional and temperamental characteristics. William James, in a flash of genius, divided human beings temperamentally into the tough-minded and the tender-minded, with their variations. It is true that our fundamental ways of

looking at truth, the basic warp of our philosophic systems, is constituted in no small part by such temperamental differences. There will always be the great idealistic stream of tendency, with its emphasis upon unities and esthetic completeness, on the one hand, and the realistic stream, with its emphasis on facts and fundamental cleavages on the other. This can be seen, not only in philosophy proper, with its interest in the wholeness of things, but in the various sciences as well, with their hypotheses. The type of ideal construction differs fundamentally between those who would translate experience into an ideal scheme like the vortex theory, and the modest effort merely to tabulate and predict the facts within particular provinces of experience. And between the speculative and the matter-of-fact types of mind, there will always be more or less suspicion and lack of understanding.

Not only does temperament affect our view of the synthesis of facts, but it affects as well our emotional attitude towards them. Thus pessimism and optimism, as attitudes towards the value of life, seem to be ineradicable distinctions in the constitution of human beings, and practically not affected by the vicissitudes of fortune. The optimistic temperament will paint new heavens and a new earth, in times of the greatest social stress and misfortune, while the pessimistic temperament will invent a world-philosophy of despair and nihilism in ages of greatest prosperity and outward success. To the temperamental pessimist, the optimist seems at best superficial and inane. To the temperamental optimist, the pessimist seems a melancholiac. Understanding under such extreme temperamental conditions is out of the question. Temperament, therefore, enters in as a fundamantal presupposition in the selection

and emphasis of our facts and thus conditions and limits the world of the understanding.

No less radical is the cleavage between the once born and the twice born, the healthy minded and the regenerate type of emotional consciousness. To the twice born the once born seem to have missed the fundamental significance of life. The twice born looks back upon his own past self, with its activities and ideals, its glowing values, and counts it less than nothing — a mere illusion as compared with the real world which he has now grasped. Thus Paul looks back upon his ardent career as a disciple of Gamaliel; and Tolstoy upon the creative activity which made him famous. The once born, on the other hand, in the even, healthy-minded tenor of his ways, fails to sympathize with the dualism of the twice born, and counts it at best emotional idiosyncrasy. The kingdom not of this world is not for him.

If there is a wide diversity and corresponding blindness as regards the temperamental and emotional nature of individuals, there is no less a difference in the intellectual range of interest, outside of which the individual is color-blind. The fool cannot sympathize with the world in which Socrates finds his absorbing enjoyment, and Socrates can see but little value in the circumscribed uncritical universe of the fool. Genius will always present a problem to the average mind. Its spontaneity and surprises, its phenomenal absorption in the task at hand, its disregard of custom and convention, will always seem a species of insanity, if not an object for intolerant persecution, on the part of conventional society.

The sort of universe that shall be ours, therefore, as regards truth and appreciation, right and beauty, whether

of high or low grade, of what unique quality, is determined for us by our instinctive heritage. Education may fail to furnish the proper stimuli. It may play them wrongly, but it cannot alter the fundamental quality of temperament and insight. Then, too, our preferences and capacities play strangely into the hands of our limitations. Our capacity for lyric sweetness unfits us for appreciating the searching grandeur of tragedy; our fondness for the babbling brook may make us deaf to the music of the sea. Our Puritanical strenuous mood blinds us to the beauty of art and play. Our creative capacity unfits us for the routine of practical life, with its joys of successful achievement. An absolutely catholic nature tuned to the whole scale of the universe, its *dur* and *moll*, its tragedy and comedy, its Raphaels and Millets, is an ideal limit, not a historic fact. For the mass of us, at least, the universe is illumined only in part.

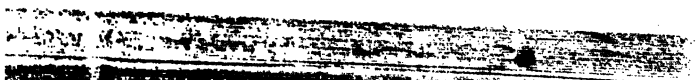
Not only are we limited by our *instinctive* heritage, as regards our blindness and insight, we are also limited by the fact that we are a part of an *historic* context, individual and social. Looking at life from the individual point of view, we find it difficult to understand the significance of the other stages of development. The boy romances about the man and his pursuits. To him they become mirages, vastly enlarged and colored by the angle of perspective. The man finds it equally difficult to enter into the world of the child with its toys, its playful moods and its circumscribed point of view.

Again, from the point of view of social history, we must recognize that we are a part of a social context of thought and appreciation, a context suffused with feeling and made conservative by force of habit. Before we can reflect we imitate the social heritage in the way of axioms and

traditions, and even the greatest genius can rise above these and by means of these, only to a limited degree. That we accept the Copernican theory, Darwinian Evolution, international arbitration, is due largely to a system of beliefs into which we are bred, and it is difficult for us to sympathize with the more primitive viewpoints that seemed equally convincing to a previous age. The axioms which we now accept will probably in turn seem equally relative and unconvincing to a future age; but we cannot make that real to ourselves now.

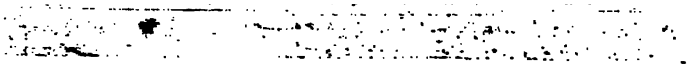
This brings me to another difficulty, and that is the limitation as regards time or the creative nature of the universe. Reality, so far as human history is concerned, cannot be regarded as complete in one edition. No chains of Parmenides have succeeded in holding the universe stable as regards its significance. We cannot read off, except merely hypothetically, the future of the race. And we do this only by eliminating the growth element and emphasizing constancies. Were time an infinite *series*, then, once knowing the law of the series, we should also know the limiting term and the sum of the series. We should know the nature of the whole as thoroughly as though we had completed all of the steps. But our serial construction of time is but a phenomenal tool for dealing with the real time process. The end cannot be read off from the beginning. We must wait for the new meanings, the gift of the future. In the meantime we live by faith. We adjust ourselves as best we can, on the basis of such identities as experience presents, amidst its transient and changing values. We must act upon the light as we see the light. The only thing eternal about our attitude is the willingness to see new light — the tolerance and fairmindedness which

acknowledges that truth is not a finite quantity and cannot be foreclosed. For the survival of our individual insights, we depend upon a constitution larger than our experience. If truth has its *roots* in certain instinctive demands of our nature, which set the program of the truth process, its *survival conditions* lie beyond ourselves in the historic experience of the race with its ideal direction. What shall have worth or meaning in the process cannot be determined by either the individual or social meaning of this cross-section of the historic stream. Our purposes shall survive, if they prove significant in the ultimate ongoing of experience and meet its ideal demands. Whether or not they do so, only the future can decide.



PART IV

TRUTH AND ITS OBJECT



CHAPTER XIV

Pragmatic Realism

In the following chapter I wish to discuss three points: the definition of realism; some objections against realism; and some consequences of pragmatic realism.

I

There has been a great deal of confusion in regard to terms in recent discussion. It may be well, therefore, to define, at the outset, what we mean by realism. A number of writers have called themselves realists and proposed to champion realism, when they are really indistinguishable from idealists. Here, at least, the Leibnizian law of indiscernibles ought to hold. If the terms realism and idealism are retained at all, they ought to stand for different concepts. Leaving out all reference to the metaphysical stuff for the time being, realism means the reference to an object existing beyond the apperceptive unity of momentary individual consciousness, and that the object can make a difference to this consciousness so as to be known. The object, in other words, is dependent upon the cognitive moment, not for its existence, but for its significance. Idealism, on the other hand, would hold that there is strictly only one unity of consciousness and that existence is a function of being part of a significant cognitive system. Thought is so wedded to things that things cannot exist without being thought. This assumption on the part of

idealism may be veiled under various terms, such as appearance and reality, the finite and the infinite, the incomplete purpose and the completely fulfilled purpose; but in the various forms of expression the assumption remains that all the facts are ultimately and really strung on one unity of thought.

Realism is an epistemological attitude and has to do with the relation of the cognitive meaning to its object. As regards stuff, it may be materialistic, spiritualistic, dualistic or pluralistic. As regards connection it may hold the mechanical interpretation concerning the relation of parts; or it may hold the teleological point of view; or partly one, partly the other, which is the position commonsense realism takes. As regards the numerical distinctness of the universe, it may be monistic, holding the universe to be one individual with only apparent diversity in space and time; or it may be frankly pluralistic, holding to the numerical diversity and distinctness of individuals. As realism, therefore, is pledged to no brand of metaphysics, no odium need attach to it so far as metaphysics is concerned.

Realism, as I understand it, does not assume that there can exist isolated or independent individuals of such a kind as to make no difference to other individuals. No individual has any properties, chemical any more than psychological, by itself. Qualities are reactions or expectancies within determinate contexts. An isolated individual cannot even be zero, as zero must be part of a logical context at least. The hypothesis of independent reals is founded either on contradictory or on purely hypothetical conditions. Kant's things-in-themselves are instances of the latter kind. These cannot exist for experience or in relation to

things as known. Yet they are supposed to be possible for an intuition entirely different from ours. Leibniz has recourse in the last analysis to an emanation theory and preëstablished harmony, which contradict his assumed independence. Cognitively independent his monads could not be in any case, since by implication they are aware of each other.

Realism does not deny that objects to be known must make a difference to reflective experience; that they are capable of being taken in a cognitive context. To deny this, within the universe of truth, would be self-contradictory. What realism insists is that objects can also exist and must exist in a context of their own, whether past or present — independent of the cognitive subject; that they can make differences within non-cognitive contexts, independent of the cognitive experience, of which the latter *a posteriori* must take account. Thus the wood in the grate burns, even though we are not taking account of it; the seed grows when we are asleep, through properties involved in its chemical context. Even our own meanings grow without our being reflectively aware of their change.

As our own cognitive meanings are necessarily finite, and any other type of knowing is necessarily hypothetical, it is difficult to see how any theory of knowledge can avoid being realistic. Absolute idealism, with its hypothetical unity; and mysticism, with its ineffable noëtic intoxication, still must admit that the finite meaning, in striving for its completion, implies an object beyond its internal intent. To deny this is to fall into solipsism or to confuse one's self with the absolute. The complete absolute meaning cannot be said to depend for its existence upon

our finite fragmentary insight. And it is with that finite intent that our problem of knowledge is concerned.

II

In order to clear the way for realism, we must get rid of some fundamental fallacies which permeate most of our past philosophic thought. One of these fallacies may be stated as the assumption that only like can make a difference to like, or that cause and effect must be identical. This has been assumed as an axiom by idealism and materialism alike. For idealism and materialism are alike indiscriminative. Their method is dogmatic rather than critical. The only difference is in the stuff with which they start. Idealism, starting with meaning stuff, tries to express the whole universe in terms of this. Materialism, starting with mechanical stuff — stuff indifferent to meaning and value — must be consistent, or as consistent as it can, in expressing the universe in terms of this. Both buy simplicity at the expense of facts.

The problem is the old one of Empedocles: Can only like make a difference to like? "For it is with earth that we see Earth, and water with Water, by air we see bright Air, by fire destroying Fire. By love do we see Love, and Hate by grievous hate." Expressed in terms of modern idealism, from the side of individual consciousness, the problem would read: Can only experience make a difference to experience; can only thought make a difference to thought? The absolute idealist attempts this disjunction: The reality which we strive to know must either be part of one context with our own finite meaning, must be included within the completed purpose, the absolute experience, of which we are even now conscious as well as

of our finitude and fragmentariness; or, on the other hand, the real object must be independent of our thought reference, must exist wholly outside our cognitive context, without being capable of making any difference to it. But complete independence is meaningless; therefore there must be one inclusive experience. To think an object is to think it as experienced, therefore it must be *experience.*

The issue at this point between the realist and the idealist is a two-fold one. The realist insists that there can be different universes of experience which can make a difference to each other; and also that what is non-reflective or non-meaning can make a difference to our reflective purposes, or *vice versa.* We can reflect upon a stone; that makes the stone experience *for us.* But does it also make the stone *as such* experience? It is as reasonable, at any rate, to say that only water can know water, and that therefore in order to know water we must have water in the eye or in the brain, as it is to say that in order to know the stone or to reflect upon the stone, the stone must be reflective. In either case our attitude is merely dogmatic. That objects in order to be known must be capable of being taken again, in the context of cognitive experience, is, of course, a truism. But that does not prove that they cannot exist without being known or that they must themselves be *experience* in order to be known.

Science has been forced to abandon the axiom that only like can act upon like. It is busy remaking its mechanical models in order to meet the complexity of its world. Chemical energy need not be the same as electrical or nervous energy, to make a difference to either. Chemical energy implies weight and mass, while electrical or nervous energy does not. The old metaphysical difficulty in

regard to conscious and physical energy has given way to a question of fact. The question is not, *Can* they make a difference to each other? but, Is there evidence of their making any difference to each other? A cup of coffee or a good beefsteak makes a difference to thinking. But that does not necessarily make them thought stuff. Whether cause and effect are identical, either in time or in kind, is something for empirical investigation to determine, and not to be settled *a priori*. Science presents strong evidence that they need be neither. The light rays may have traveled through space many years before they make the difference of light sensations in connection with our psycho-physical organism; and that they make such differences does not prove that they are themselves sensations.

It is time that philosophy, too, were abandoning dogmatism in favor of facts. It is no longer a question of materialism or idealism; but we must use idealistic tools where we are dealing with idealistic stuff, and mechanical categories where the evidence for consciousness and value is lacking. We must learn to respect ends where there are ends; and to use as means those facts which have no meaning of their own. To fail thus to discriminate is to be a sentimentalist, on the one hand, or a bore, on the other. What we want is a grain of sanity, even the size of a mustard seed.

The merit of idealism, and for this we ought to give it due credit, is that it has shown that the universe must be differentiated with reference to our purposive attitudes. This is true whether the reality to be known is purposive or not. Where idealism has been strong is in interpreting institutional life. In order adequately to know another meaning, we must copy or share that meaning. This is true

whenever our reality is thought stuff. Idealism, on the other hand, has always been weak in dealing with nature, and, therefore, in furnishing the proper setting for natural science. Idealism has striven to institutionalize nature or to reduce nature to reflective experience. In order to do this, it has been forced either to insist upon the phenomenality of nature, with Berkeley and Green, or to take the ground of Hegel, John Caird and Royce, that nature is essentially thought, social experience, the objectification of logical categories, though *an sich* and not *für sich, i.e.*, only as lived over by reflective experience. Hence nature becomes capable of system; it is essentially systematic. In thus hypostatizing the unity of apperception into an objective unity of nature, idealism has failed to discriminate. The stone and Hamlet are lumped together. But we cannot acknowledge or react on nature as experience on its own account, and therefore idealism breaks down. We make the *conceptual system* of nature, as social minds, to anticipate the future and to satisfy our needs. The *meaning* of the energy that satisfies, and of the transformations by which it satisfies, is furnished by our ideal context. That water satisfies thirst; that fire burns wood — these are extra-subjective energetic relations. But the why must be furnished by our scientific experience, partial and fragmentary though it is.

Materialism has been quite right in applying the mechanical categories to part of reality. The mechanical ideals will always find favor in natural science, where the aim is not the understanding of an objective meaning, but *control* of nature for our purposes. Where the materialist shows his dogmatism is in applying categories which are convenient in dealing with the non-purposive structure of the

world to institutional reality as well. In failing to make them work here, instead of calling into play new categories, he insists upon eliminating the refractory world of meaning and value, while the idealist, with his eye primarily on the world of social tissue or ideals, has insisted that the real is essentially the social or communicable. Each has failed to recognize how the other half lives.

Another dogmatic fallacy which has been committed by idealists, to smooth out the realistic discontinuities and ease the shock of actualities, is the play upon the implicit and explicit. I would not say that the category of the implicit has no legitimate use. Wherever we are dealing with a purposive whole of any kind, intellectual, ethical or esthetic, we not only can but must use the category of the implicit. The earlier part of the argument must imply or foreshadow the later within the logical unity. The earlier part of the dramatic plot must find its fulfillment in the later; the moral struggle points to an ideal. The abuse of the category of the implicit comes when we apply our purposes to infra-purposive realities. Because thinking as a process arises under certain structural conditions of complexity, this does not prove that earlier and simpler stages of development must be treated as degrees of thinking. There seem, on the contrary, to be qualitative leaps in the genetic series of experience, not reducible to the quantitative category of degrees. Thinking is a new fact in the series — furnishes a new context of significance. Again, because we systematize nature according to the presuppositions of the reflective moment, this does not imply a reflective unity in nature. Here again there seems to be a discontinuity, so far as meaning is concerned, which thought must acknowledge and cannot bridge, objectively, at any

rate, by any implicit assumption as regards thought's own procedure.

Another current dogmatic fallacy is the assumption that because we *take* contents over in thinking them, therefore we *transmute* or make them over, if indeed we do not create them outright, in taking account of them. But the transmutation of the immediate or non-reflective has to do with its significance, not its content. The colors in the painting are the same that we have seen thousands of times, though here they are used to express a new meaning. The gold we think about has precisely the same qualities as the gold which was present as an object of immediate perception or esthetic admiration. It does not change its color or size because we reflect on it. It is the same object with the same qualities and relations, except that much of the existential has been omitted and the relation of cognitive significance has been superadded.

Another fallacy is the assumption that what is not stuff cannot be real. This assumption is very old. It is assumed by Parmenides when he dismisses non-being as unthinkable and unspeakable. It is assumed by Kant in his antimony of space and time, when he maintains that the relation to nothing is no relation. Most philosophers have followed the leadership of these distinguished thinkers. But the assumption that zero is unthinkable and that the relation to nothing is no relation has been abandoned by mathematics for logical reasons. There is no more important relation in number than the relation to zero. The limiting concept of zero has also proved of great value in metaphysics as well as in mathematics. Take space for example: While space is no *thing*, yet as distance it is an important condition in the interaction of things.

III

Instead of the dogmatic method pursued by the old idealism and materialism alike, we must substitute the critical method. This method has been rechristened within recent years by C. S. Peirce and William James and called pragmatism. As I understand this method, it means, simply, to carry the scientific spirit into metaphysics. It means the willingness to acknowledge reality for what it is; what it is always meaning for us, what difference it makes to our reflective purposes. Instead of insisting upon identity of stuff, as dogmatism has always done, this method is discriminative. It enables us to break up the universe and to deal with it piecemeal, to recognize unity where there is unity and chaos where there is chaos, purpose where there is purpose and the absence of purpose where there is no evidence of purpose. The universe in each part or stage of development is what we must acknowledge it to be — not necessarily what we *do* acknowledge, but what we *must* acknowledge to live life successfully. This acknowledgment, moreover, is not a mere will to believe or volitional fiat, but, at least as knowledge becomes organized, a definite and forced acknowledgment. An unlimited will to believe as regards objective reality would be possible, if at all, only before we have organized knowledge, that is, if you could imagine knowledge starting in a conscious will-act. When we already have organized knowledge, if we choose to know, the possibilities become limited. In case of fully organized knowledge, the place of the indeterminate will-to-believe would be the will-not-to-think, that is, to commit intellectual suicide.

We can not state the truth attitude in merely sub-

jective terms. The truth attitude must face outward. It must orient us to a context existing on its own account, whether past or present. In such orientation or such external meaning lies the significance of truth. The truth attitude cannot be characterized as merely doubt with a transition to a new equilibrium, and as ceasing with certainty. The truth attitude *may* at least involve the consciousness that we know that we know. To be sure, the nervousness of science leads us to repeat the experiment in order to make sure that we have made no mistake; but that does not alter the truth of our first finding, if the experiment proves correct. Truth, as we have it, involves two things, — first, luminousness, or a peculiar satisfaction to the individual experience at the time, due to its felt consistency or fluent termination in its intended object. This is the positive truth value, whether formal or factual. The other factor involved in scientific truth is the feeling of tentativeness or openness to correction. This is a qualification or nervousness on the part of the truth attitude, either as a result of an actual feeling of discrepancy and fragmentariness as regards our present meaning; or it may be due to a more general feeling of instability based upon our finitude and the time character of our meanings. Such correction can only come through further experience, whether of the immediate or formal type. We cannot say that the value *consists* in the future consequences or leadings. These obviously have no value until they come. Further experience furnishes the possibility of correction of our truth values and so of producing new values. I say *possibility* of correction because repeating the experiment, while it relieves our nervousness, does not necessarily produce a new truth. The truth meaning must first be

stated in schematic terms on the basis of the data as we have them and then tried out in terms of consequences. Such consequences must be in part present to us as a result of past experience. We do not formulate theories *in vacuo*. If the truth value lay merely in the future consequences or leadings, there could be no such thing as truth value. Truth must face backward in order to face forward. It is Janus faced.

We may lay it down, then, that the real must be known through our purposive attitudes or conceptual construction. Real objects are never constituted by mere sense perception. They are not compounds of sensations. Sensations are our awareness of the going on of certain physiological changes, whether connected with an extra-organic world or not. They cannot be said, therefore, to constitute things. These presuppose selective purpose. They can only become objects for a self-realizing will. The real is the intelligible or noumenal, not the mere immediate; and by the noumenal I mean what we must meet, what reality must be taken as in our procedure, as opposed to our sensations. It is through conative purpose that knowledge of the character of our world becomes possible. The immediate, however, must furnish the evidence; in the language of James it puts us next to the real object. It establishes energetic continuity with the intended context of reality.

Empiricism is at best a halfway house. We cannot say that the real is merely what *is* perceived or what *makes* an immediate difference to our conscious purposes, whether in the way of value or of fact. We must at least say that the real is what *can* be perceived, unless we bring in some *deus ex machina* or supernatural storehouse of percepts, as Berkeley does. Surely the empirical idealist of to-day

would not say that the increased powers of the telescope or microscope create the facts. Nor can the *uniformity* of our expectancies be credited to our individual perception; and hence from the perceptualist point of view, it requires another *deus ex machina.* To say that uniformity or stability is a social fact does not explain the fact, but presupposes an extra-social constitution, a constitution binding upon all of us. Not only perception, but *possible* perception must be invoked to complete the empirical idealist's reality; and "possible" itself is not a category of perception.

As the old idealist and the old realist alike assumed the qualitative identity of cause and effect, it became necessary to think of subjective states as copies of external qualities. Naïve realism and idealism alike assume this copy-relation of the subjective on one hand and the real qualities on the other. In modified realism, the primary qualities at least must be copied. For the empirical idealism of to-day the problem still remains as to whether the perceptions and the objective qualities are the same. Unless the idealist becomes a solipsist he must show that his subjective copies are adequate to a world as existent. This difficulty would vanish, once we abandoned the dogmatic and unintelligible duplication of qualities, as though qualities could exist passively by themselves. Qualities are energies. They are what objects must be taken as in determinate contexts. To ask what perceptual qualities are, when they are not perceived, becomes in that case as superfluous as it is meaningless. Processes, of which we are not conscious, have no perceptual qualities, unless, under certain other conditions, they can make perceptual differences to beings organized as we are. To speak of archetypal qualities is

merely duplicating this moment of perception — to take what exists in a context as an abstract idea. If these non-conscious reals act upon other non-conscious reals, we have not perceptual differences, but chemical or physical changes. These must be interpolated by us in order to make continuous our perceptual scheme. We saw the wood burning in the grate: in our absence the fire has gone out and the wood has turned to ashes. To piece together this discontinuity in our perceptions, we must assume certain differences or changes which cannot themselves be expressed as perceptions. And thus we come to realize that while we must take some qualities of things as existing as part of our perceptual context, we must also take other qualities as existing independent of perception in their own dynamic thing-contexts, which we can read off *a posteriori* and predict under determinate conditions.

Perceptual qualities, therefore, are not the only qualities. Even granting a being who should have perceptual differences for all the changes going on, minute or great, and without breach of continuity, he would not have a complete account of reality. The real individual cannot be exhausted as a compound of perceptual qualities. He must be acknowledged as something more than the sum total of his sense appearances, past, present and future. If sensations alone constituted reality, then the more sensations the more reality. Take Helen Keller's reality, for example, on this supposition. For convenience, I will use Professor Titchener's estimate of the number and kinds of sensations, leaving aside the question here as to whether all sensations can be taken as sense qualities. According to him, sight furnishes us 32,820 different sensations, hearing 11,600, making a total of 44,420. As Helen

Keller possesses neither the sense of sight nor that of hearing, her reality would be to our reality as 15 is to 44,435. But Helen Keller seems to be able to enter into communion with human beings all over the world, to share their purposes, to sympathize with them and help them better than most human beings with the use of all their senses.

The reason the position that reality is the sum of its perceptions has seemed so plausible lies partly in the fallacious use of the method of agreement, partly in the confusion between the *causa cognoscendi* and the *causa essendi.* The perceptual qualities do exist; and it is through them we become immediately conscious of an external world. Objects are what they are perceived as, but indefinitely more. We must not forget that there are other contexts, such as the multitudinous thing-contexts and the contexts of our will attitudes. These may be practically more significant for determining the reality of a thing than our sensations — not all of which can be treated as sense qualities. It may be of more practical significance for the nature of water that it satisfies thirst than that it gives us a number of contact reactions. When we come to deal with a human being, a friend of ours, the inadequacy of mere perceptual qualities becomes even more evident. He is not to be taken merely as his height, nor his color, nor his softness, nor his hardness, nor even the sum total of all the perceptions we can get. He is primarily what we must acknowledge, what fulfills a unique purpose on the part of our wills, and, as opposed to the gold or the stone, a reality with an inner meaning which we can to some extent copy.

We have seen that experience becomes truth only through conceptual construction or purposive will attitudes.

Percepts only become cognitively significant as *termini* of ideal construction, as verification stuff. No wonder that the perceptualists have not been able to discover non-being dimensions, since these could not be perceived, but discovered only through the most subtle conceptual tools, according to the real difference which they make to our purposive striving. We have already indicated that because reality can only be known through conceptual construction, that does not mean that reality must be conceptual. Reality is, however, knowable only in so far as it is conceptualized. In recognizing that reality could not be treated altogether as purpose, moral or intellectual, Kant showed a keenness far exceeding that of his critics.

Since perceptual qualities are the felt continuities or functional connections of energetic centers, when a conscious agent is part of the complex, there can be no sense in speaking of these qualities as either acting upon the will or parallel to the world of will acts. The perceptual qualities do not exist independent of the concrete situation, so that they could act upon it. They are what the object must be taken as, or known as, in the special psychophysical context. They preëxist only potentially, *i.e.*, as what the object *can* be taken as in the determinate context. They are, however, only one type of transeunt connections or energetic continuities. These energetic continuities may be intersubjective relations, and in that case communication and conceptual understanding are possible. They may be relations to centers below the reflective level. In that case knowledge becomes instrumental — a reweaving of a non-meaning context into the unity of our purposes.

Equipped with our subjective purposes, or conceptual

tools, we can confront the larger world. In the course of conscious experience, as we strive to realize our tendencies, formal or practical, the world beyond us becomes differentiated and labeled according to our success or failure. But the real objects are not constituted by our differentiation, except when we make our realities outright, as in the case of artistic creation. The meaning for us is, indeed, created in the course of experience, but not the objects which we mean. Else science were impossible. The real objects must be acknowledged or met, whether they are to be understood or to be controlled.

The world of real objects may be differentiated into two general divisions, the world of being or stuff, on the one hand, and the world of non-being or non-stuff, on the other. By the former I understand various types of expectancy or uniformity, which we can have in regard to our perceptual world. These types of uniformity, again, can be graded into two main divisions, namely, those which we can acknowledge metaphysically as purposive in their own right and those we must acknowledge as existing and must meet, but which have no inwardness or value on their own account. The former we must learn to understand and appreciate, the latter to anticipate and control. The former constitute the realm of idealism, the latter of materialism. As regards the stuff character of reality, this theory is frankly pluralistic, acknowledging different kinds and grades of energetic centers according to the differences they make to our reflective purposes.

But we must also take account of the non-stuff dimensions of reality. These differ from the stuff types in that they are not perceptually continuous with our psycho-physical organism. They cannot appear as immediate phenom-

ena, but still must be acknowledged for the realization of our purposes. Thus we must ackowledge the transformation of our values, the instability of our meanings. *Time* creeps into our equations and makes revision necessary. New values can only be had by waiting. Again, *space*, as distance, abstracting from the content of space, conditions our intersubjective relations, as well as our relations to non-purposive beings. It makes possible externality of energetic centers and free mobility. Further, the relativity of our meanings and ideals makes necessary the assumption of an absolute *direction*, a normative limit, to measure the validity of our finite standards. Lastly, we find it convenient to abstract the fact of *consciousness* from the psychic contents and the conative attitudes. While our awareness is intermittent, the conative attitudes and purposes may be comparatively constant. These non-stuff dimensions must be regarded as real as the will centers which they condition. They are more knowable than the world of stuff, because their characters are few and simple, whereas the varieties and contexts of stuff are almost infinite. Thus, by means of our conceptual tools, we are able to discover not only various kinds of stuff, but we are able to discover dimensions of reality of ultimate importance, where microscopes and telescopes cannot penetrate — realities which eye hath not seen nor ear heard, nor ever will see or hear, more subtle than ether or radium.

CHAPTER XV

The Object and its Contexts

To avoid confusion, it is well to distinguish at the outset between reality as the object of our knowledge and as our object-construct. The real object is that which we must meet, to which we must adjust ourselves, in order to live to the fullest extent. The object-construct, or the scientific context, is the sum of our knowledge or definitions about reality, our series and other conceptual, tools by means of which we strive to describe and reconstruct our world. Ask the scientist about energy, ether, gravitation, or water, and he immediately empties himself of his physical and astronomical equations, his chemical formulæ, etc. These are the scientific elaborations of experience for our convenience and need not be like the facts they aim to manipulate. The equations of Newton are not like the facts or changes that gravitation symbolizes. We thus elaborate our world into various series or contexts, by means of which we strive to anticipate the real object. We must distinguish, in other words, between the cognitive context, on the one hand, and the context of object, which we strive to know, on the other.

OBJECTIVE CONTEXTS

Every fact can be taken in several contexts. It can be taken in a physical context as part of the interacting world in space; and it can be taken in a psychological context,

individual or social. Thus the content, sun, is part of a world of physical processes and known to us by the differences it makes to other physical things and to our psycho-physical organism. The sun is also a concept with a history and place in our thought development, individual and social. Whether we can know has, therefore, a three-fold meaning. It may refer to the possibility of taking the same meaning twice within the one stream of experience, or to the possibility of two knowers having the same meaning, or to the sameness of the physical object. In any case the problem is difficult enough, but it can be simplified by proceeding upon an empirical instead of an *a priori* basis. By this method we shall at least not multiply difficulties.

Can we take an object or fact twice in our ***individual history?*** Can we logically take a meaning over without doing violence to it? Can we know the past? Obviously, unless this is possible, identity anywhere else is meaningless, for all knowing in the end must be individual meaning. Social reference itself must have its basis in individual constitution. The ultimate evidence for the existence of sameness must be the individual feeling of sameness, though this sameness of conscious functioning presupposes a degree of structural uniformity on the part of reality which makes the intuition of memory and familiarity possible. The principle of indiscernibles is at any rate valuable as a pragmatic principle. We may indeed have *a priori* reasons, and empirical too, for suspecting the naïve feeling of sameness, even unaided by microscopes, but we cannot wholly discredit it without discrediting the judging process itself. We must hold that what can be taken as the same is the same or practically so. There is of course the supplementary social test, in any particular case, viz., that

others can recognize our attitudes, our meaningful functioning, as the same or different, and so correct our pathological feelings. But the others, too, are, after all, strands of individual history. If the consciousness of every individual were evanescent, there could be no more recognition of the sameness of other meanings than of our own. That they can mean that I am the same must, in the end, come back to the continuity of each individual meaning. Apart from such a continuity, social and physical sameness would be alike meaningless. Our meanings, then, like our objective individuals, are the same just in so far as we can acknowledge them to be the same. My concept, sun, still means the same sun, has the same perceptual nucleus of shiny disk and its apparent motion, however much it may have been enriched by astronomical study.

That the past, in so far as it has meaning for us, exists as a part of the present cognitive context is a truism. When it is not thus taken up into the present context, it persists potentially as dispositions, manuscripts, or geological strata. It is not well, however, to press this *a priori* argument, derived from the nature of the apperceptive context, too far. If the past were altogether fluent, we could not reconstruct it at all. It never could mean past to us. It must have a *content* of its own, even though the cognitive context has changed. Pure nothing could not afford a basis for serial construction. In geological transformations, the ribs of the old strata do stand out with an individuality of their own, furnishing the basis for our ideal perspective. And in psychological development, too, we must recognize the ribs — certain structures which still stand out as individuals with their own meaning, though in the atmosphere of the present setting. We must feel

the functional identity of the past in the present. Here, too, we have record, the retentiveness of the individual mind. The old meanings remain. They cling to their structural conditions as the vine to its artificial support. They do not simply flow into the next moment, for we can acknowledge and compare their own meanings with the new meanings which have replaced them. While the past meanings are past so far as being our personal meanings is concerned, they are not past as ideal structures. As such they can still become memories, to be re-lived when the light of consciousness is thrown on them again, even though their place in the growth series makes them have the feeling of pastness. They are part-minds — resurrected, dynamically continuous with, but not created by, the present subject. They must be acknowledged as having their own setting and meaning independent of the meaning and value which they have in our present cognitive context. They figure thus in two teleological contexts; and these again owe their continuity to their figuring in a world of physical processes.

The dating of this sequence of meanings would be conjectural beyond a few seconds, if it were not for the tag of the chronological system associated with the structures. Except for this artificial time coefficient, the understanding of past structures does not differ essentially from the present. They do not differ necessarily in vividness or distinctness from experiences much more recent. These characters depend upon other conditions besides lapse of time. The difference again in the feeling of intimacy between our own past meanings and other meanings must be sought in the difference in functional continuity with the present. This gives the former a different intuitional

value. But this intuition of familiarity may fail even as regards my own successive contexts. The part-minds or associative contexts of the past may become dynamically discontinuous with each other and with the present context, as in multiple personality. In such a case we no longer put the personal stamp upon them. We know them, if at all, as we do the contexts of other egos. And even in ordinary life, we may depend entirely upon records for our own past. The interpretation of our past, in any case, is not a matter of knowing the brain continuities, if we did know them, but an immediate recognition of the meanings themselves, whether brought to us by the processes of association or objective records, though this does not disprove the dependence of our sense of continuity upon physical processes.

So socialized is our experience, so strung out upon the conventional measures of time and space, so associated with language, that the interpretation of meanings—even of our own past—is largely an interpretation of language. Words and their contexts are the social correlates of our meanings, in our trying to understand ourselves as well as each other. Brain correlation, however real it may be in the world of causal explanation, has no relevancy to our interpreting of meanings. The support of the world of meanings is language and social institutions. And here we can develop our ideal relations, quite independent of our ignorance of brain dynamics. Logic and ethics were full-fledged sciences before physiology could be said to exist.

But contents must be taken not merely as figuring in the context of individual experience, they must also be taken as figuring in *historic social experience*. Here a serious problem arises from the fact that we have to recognize a num-

ber of coëxisting and overlapping individual contexts. As these contexts cannot be treated as mere duplicates, the problem of knowing the same object takes another form, viz., whether there can be universal objects or objects for several knowers. Here again the test must be empirical. We, as several knowers, do seem to be able, in spite of the seeming incommensurability of the contexts, to refer to the same content, to agree and to act together. The discrepancies of different fields of consciousness, their different fringes of significance, must be settled by the same inductive tests that any other problem involves, not simply be deduced *a priori*. Such experiments, for ascertaining, for example, the difference in associative constellations in different individuals, have already been carried on by Münsterberg and others. Such differences, however, have to do with the imagery of the meaning, not its final intent or reference to an objective world.

Through the common understandings of the several subjects we build up the world of science, institutions and beauty. These unities come to be recognized as existing on their own account. True, these social contexts, as the past contexts, must figure in the cognitive context of the individual subject. They must become known through the agreement of the idea with its intended consequences within individual experience. But we must acknowledge, as independent of the cognitive context, an objective context in which the facts have their own relation and significance, which we must respect. Like individual experience, social experience shows its dependence upon physical continuity for records, by means of which the meaning can be handed on to the future.

We have been forced to take account of two forms of

identity, teleological identity and physical identity. The former has presented two kinds of problems, viz., Can present subjects know the same meaning as past subjects within the same history? And can one individual subject know the same meaning that other subjects know? In either case, teleological identity is closely dependent upon physical identity. For my sharing my own past, or the possibility of memory, is dependent upon processes, not themselves experience. Else there would be no continuity of waking moments with each other. Social agreement, too, involves a physical constitution which makes continuity of centers in space possible and which concerns those records from which we can reconstruct our meanings in time. Identity of meaning is impossible unless we can take our physical objects twice.

Nature, as our system of knowledge, is our social construct, with its systematized expectancies as reduced to scientific technique. Yet, while physical science is a social institution, we cannot recognize its object as a social institution. We must distinguish between communicative processes, which we can acknowledge as having a meaning or purpose of their own, and non-communicative processes which we must deal with in a merely external way. While both have their own context, independent of the context of our cognitive purpose, the *context of the physical processes* is not one of meaning, but of causality. The physical processes furnish a limit which our ideal construction must meet. They are not mere phenomena. We must recognize physical things as figuring in their own context of physical interactions, within their own space constellations, and their own history of cumulative changes, though they also figure, as contents, within social experience and within the individual

conscious moment of perception and interpretation. Only the latter contexts have meaning and value bound up with them. The former *means* a context for our ideal construction merely.

Existentially, if not teleologically, our relation to nature is bipolar. We do not make the gravitational differences, the interstellar distances and the geological strata when we take account of them. They acquire significance, not existence, when they are taken over out of their own context into our cognitive context. The latter must tally in its coëxistences and sequences with the intended context of nature as perceived, if we are to anticipate successfully its facts. However much we socialize nature in our scientific procedure, science itself becomes meaningless unless we also respect nature as having its own context.

We have seen that the processes, which we must take account of, exist in three types of context. They figure in the world of interacting energies, with their causal and space relations; they figure in the social contexts — in science and institutions, which we must imitate and react upon; they figure in the special context of each individual, as he tries to appropriate the processes as part of his world of meanings. In studying the record of Thales or taking account of our own meaning of yesterday, all three contexts are involved.

RELATION OF THE CONTEXTS TO EACH OTHER

What relation do these contexts bear to each other? The physical sun out in space and my meaning sun are both real structures. They make a real difference to each other. My meaning is not merely a passive picture, but a conative tendency, an energy which leads to certain motor con-

sequences, at least so far as my own body is concerned. The differences my purpose makes to the sun are negligible for scientific purposes. And so we come to treat the process as one-sided. But while we may, for certain purposes, ignore the differences our thoughts make to the physical world, we must, nevertheless, in order to have knowledge, assume that the universe is a dynamic whole. The thought structure must be dynamically part of the same world with the sun structure. It hangs together with the sun, mediately at least, by hanging together with our own nervous system and through the control it exercises over it and the bodily movements. Every fact must be capable of making a difference, directly or through intermediaries, to other facts, and especially to human nature, to make knowledge possible. Hence parallelism is an impossible theory. It is well to remember that our splitting the world into ideal series, such as mind and body, does not affect the continuity of the energetic relations of the real world.

When we come to the relation of the context of individual meaning to the social context, it is easier to see how one makes a difference to the other. All thinking, however many private frills and corruscations it may have, is social thinking. It can develop only, and become valid only, in response to social needs. On the other hand, the very existence of a social context is due to the overlappings, the common attitudes and contents, of individual minds. This is true practically as well as theoretically. Mutual trust or distrust makes all the difference between economic confidence and social stability, on one hand, and panic and anarchy, on the other. In the plastic world of intersubjective relations, our understanding each other's meanings and our will attitudes toward each other do make

decided and recognizable differences to the structures involved, individual or social.

When we come to the past contexts again, here we must recognize a different relation. While these contexts can and do make a difference to the living present, send their radiation on as we restore continuity with them, we cannot in turn influence them. We cannot change the content of Homer's Iliad by our thinking about it, though we can change its meaning and value for ourselves.

Our relation to the physical world is existentially bipolar, as we must acknowledge the *existence* of nature, but it is teleologically unipolar, as nature has significance and value only as taken up into the context of human nature. We must acknowledge Mt. Washington as existent; but we cannot acknowledge it as having an inner meaning or halo of value of its own. While all our meaning contexts, individual and social, must hang on nature for records, it must hang on them for significance. Our relation to the social context, again, is both existentially bipolar and teleologically bipolar, as we must acknowledge the other subjects both as existing on their own account and possessing a meaning of their own. In talking with a friend we must both acknowlege him as existing and as having a meaning, independent of our cognitive attitude. The past, finally, we must take as teleologically bipolar, for we must acknowledge that the past contexts have a meaning of their own. We do not create the meaning of the Iliad, or our meaning of yesterday, by taking account of it. But the relation is existentially unipolar, for the past-subject itself has ceased to exist. The creator of the Homeric meaning is no more.

Each context, finally, must be recognized, by the cogni-

tive subject, as having its own perspective and its own rate of motion. While the same content, sun, figures as part of the physical world; in the context of social history; and in individual history, the physical history of the sun, with its dizzy figures, bears no proportion to the history of the social concept, sun; or its cognizing in individual experience. And in each case the object must be recognized as qualified by the relations or laws of the context within which we are taking it — the laws of the associative context of the individual mind; of the intersubjective connections of social history; and of the physical uniformities as observed by natural science. This is true, though they must also be acknowledged as hanging together within a dynamic whole.

We can see now that the contention of Bradley, that the object selected or referred to in the truth attitude is always reality, is at best a clumsy way of putting it. It reminds one of the story of the man in the Adirondacks who tried to shoot a bear by aiming at him generally. To be sure, underlying our whole search for knowledge is the postulate that the facts or processes which we strive to know belong to one world with our cognitive purposes and with each other, *i.e.*, they can make differences to each other. A wholly indifferent process is obviously unknowable. But while this postulate of continuity is assumed or tacitly implied in all our judgments, it can hardly be said to define the judging process. This does not aim at the universe generally, but is fundamentally selective. The object must be singled out from the immediate mass of experience by a conscious purpose; it becomes meaningful precisely by being thus selected and furnished its specific context. The object of the selective meaning is

precisely what the subject sets itself or is interested in, whether Apollo, or two plus two, or gravitation, or your friend's opinion, or time, or space. There is no need of mystification here.

That all the facts or processes of the universe belong together within an absolute context of significance; that every process makes a reflective difference to every other, or is a fragment which dialectically unravels a through and through meaningful system; and that therefore in meaning anything whatsoever we cannot help, whether we know it or not, to mean the whole, because it is the whole that means — this, while a logically possible hypothesis, is not a self-evident axiom. It does not, with all its confidence, dispel one whit of our ignorance or make scientific experiment and discovery any less indispensable. It must at any rate come as an induction from the needs of human experience, not as an assumption at the outset.

TIME AND THE OBJECT OF TRUTH

Is the object either a past or future state of consciousness? Can the object in the first place be stated as a past state of consciousness? This has been assumed by many philosophers. It has been pointed out that consciousness is ever on the wing; that to attempt to analyze and describe it is to transfix it; and that what reflection deals with, therefore, is something that has been, a *post mortem* autopsy. We are told that knowledge looks backward, while action looks forward. If this were true, we could not only not know our passing moments, we could know no object whatever, as every object of knowledge must figure in this passing stream. To be sure, the reflective attitude is very different from the non-reflective, and an immediate content

may later figure in a reflective context. But subject and object cannot be separated in time; they are phases or poles of the same reflective moment. The object in any moment is what we mean, that which interests us, that which we conceive as the fulfillment of our purposes whether moving or static. And this surely need not be a past state of consciousness, unless the purpose is to understand the past. And even here we are striving to realize at least an individual, and generally a social, present purpose — a purpose big with the future, which it strives to bring to birth.

On the other hand, it has been maintained that the object must be stated as future states of consciousness. Truth, we are told, consists in its consequences. As attention is essentially prospective; as knowledge is for the sake of adjustment to a larger world, this view seems more reasonable than that the object is a past state of consciousness. But while the future consequences may furnish a corrective of knowledge, they cannot be the object aimed at. If the truth attitude consisted in consequences altogether, it would be as meaningless as it would be non-existent. We must aim at a present constitution, we cannot aim at what does not as yet exist. Even the consequences as we picture them to ourselves are our ideal constitution, based upon present data, the projection of the uniformities as we must take account of them. In the process of experience, to be sure, both the setting and the values may change; and the aim comes to have new meaning, whether it works or must be abandoned. But the object referred to is not the future consequences with their unforeseen real differences. They constitute quite another story, which must be waited for.

In the effort to arrive at truth, history and science must use the same methods. In either case, we must proceed by means of hypothesis to select and systematize our facts and weave them into a consistent whole. In either case validity must mean that the results permit of social agreement, as the process of investigation goes on. The data of the past must be treated as the data of the present, the motives of Cæsar like those of Roosevelt, the past nebulæ like present nebulæ. In either case, the immediate data must be reconstructed into a whole on the basis of their identities and differences, interpreted in terms of concepts. Sometimes we may simplify our present complex situation by spreading it out as a genetic series, as Darwin simplified the present complex forms of life by his evolutionary theory. Sometimes we may simplify past results by reproducing them in present experiments as physics illustrates geological changes, by its high pressure, its electric furnaces and other experiments. But whether we are dealing with scientific or historic construction we are striving alike to unify present data.

The difference between history and science is not a methodological difference, but a metaphysical difference. Science is dealing with a world which we acknowledge as existent. The chemist and the psychologist can become perceptually continuous with the objects which they mean, while the historian from his symbolic data, which we call records, is trying to reproduce an object no longer possible of perception or direct communication. Cæsar is no longer marching his legions across the Rubicon; fair Helen and the heroes of the Trojan war are at rest. To be sure, the historian is not dealing with a myth world any more than the scientist. He is dealing with individual meanings or

structures continuous with our knowing attitude. But these individuals have survived only through the symbolic substitutes or vehicles of language and art which have carried the meanings down the stream of time. The parchment has survived the creator of the meaning, though the soul of the meaning itself may outlive many parchments, may require a succession of carriers. The continuity is a mediate continuity; and a mediate continuity which only leads ideally back to the real subject. The real processes themselves, with their living glow, are not reversible or reproducible. The time element, therefore, makes the difference between the facts which the scientist and the historian are striving to reach. This comes in as a limiting or metaphysical concept, however, and does not, as such, play a part in the induction which must depend through and through upon data, whether as regards content or chronology.

Since reality is individual and changing, absolute fact, as our final interpretation of reality, must be regarded as a conceptual limit. Fact, as we have it, is the result of such identities as can be reached by various coëxisting meanings about their common intent, as regards themselves, the past and nature. This interpretation, however, is an indefinite quantity. Our interpretations and intents must still be reinterpreted to fit into the future contexts of judging experience. The context of history, so far as we know, is never completed. What is the use of talking of the absolutely abiding and permanent, where nothing so far as we know is abiding or permanent, and where life is a continuous readjustment to a changing world of facts and values? On the other hand, what is the use of talking about an absolute flux where, after all, we have a considerable degree of continuity and steadiness? Absolute flux

and absolute identity are both logical limits within such a world as ours. Here I can see the advantage of the absolute as an ideal hypothesis. Absolute fact would be the steady glare, the unblinking insight, of an absolute ego, the same yesterday, to-day and forever. Such a limiting concept, like Newton's absolute rate of motion, furnishes at least a convenient device for showing the relativity of our actual facts, as Newton's hypothesis of an absolute rate of motion shows the relativity of all empirical rates.

One thing, however, is clear. Truth always *means* to be eternal. No truth ever intended its own falsity, even though our knowledge of the law of change has made it evident in general that it may not be final. In so far as it satisfies our demand, is really truth for us, there is stamped upon it its own eternal intent. I have reference here not to the mere symbols which stare us in the face with their permanence of structure, even after they have, like old, worn-out clothes, been discarded. I am referring to the living truth attitude. This always says, "Verweile doch! Du bist so schön." Precisely here lies the tragedy of truth. The real world, the real subject that judges and the real object it means, know of no eternity; they will not be bound by the chains of thought, Parmenides notwithstanding. Thus our experience is ever outgrowing our concepts, crystallized into language. Even when the subjective structure grows stereotyped and is satisfied with the old point of view, the real situation does not stop for all that. What is more pitiable than to see the old investigator sticking to his antiquated hypothesis in spite of new evidence and larger generalizations?

Truth or meaning is always of the moving now. It makes sketches by catching certain constancies — sketches

something like reality, even as the cartoonist's sketch resembles Roosevelt sufficiently for identification — but the real change value it cannot catch, except as it congeals into results. Truth, therefore, just because it attempts to fix a world of process, must, to a certain extent, be hypothetical. It cannot bind the future. It is based upon the relative uniformities of experience which in the case of the physical world have an almost eternal fixity as compared to our fleeting lives. Outside of that, our equations talk nonsense, as Clifford says. The laws of science, even mechanics, are, after all, our plastic attitudes toward things. Our atoms and ethers, our law of conservation of energy and our law of gravitation, must be retranslated in the light of fresh discoveries. The very fact that our laws are *human* concepts, apart from any change in the objects they intend, which for mechanical purposes may be practically stable, must make them plastic in the ongoing stream of experience. The unity we find in things is first of all the unity of our experience and must vary in meaning with it.

IS TRUTH CONVENTIONAL?

Is truth conventional? It is easy, we have seen, to confuse truth and its symbols, such as language and mathematical models. Those who have insisted upon the conventional character of truth have, no doubt, been guilty of such confusion. Because language is made up of abstract entities in the way of substantives and relational terms, they have insisted that our judgments also are made up of such entities and hence must be false to the unitary whole which they postulate. Most of the objections raised by such critics of thought as Bradley are based upon the con-

fusion between the abstract symbols, thus converted into entities, and thought. Hence the ease with which thought is transcended in those writers — transcended by first being caricatured, and then abandoned for mysticism.

But it is not only from the side of philosophical mysticism, but from mathematical science as well, that the question of the artificiality of truth has been raised. Nature knows nothing of our ellipses, parabolæ or equations. Hence is not scientific truth merely conventional? No doubt there is a conventional element in truth. Human nature contributes the measures and series, the descriptive symbols; and, inasmuch as individual invention and technique count for more in science than in common sense, the artificiality seems all the greater. But it must be recognized that there is a surd of content which we do not invent, viz., the perceptual sequences which we try to describe. This has been called "the universal invariant." The psychologist would probably be skeptical about universal invariants where human individuals are involved, but we may be said to have at least such constancy as permits of pointing, and which furnishes the real currency on which our credit system in the way of scientific laws and formulæ do business. The contents may remain constant, however much their values may change in new subjective contexts.

The phenomenal character of our knowledge, however, does not consist in that facts are vitiated by being known, as has sometimes been held. On the contrary, reality, whether of the thing kind or the self kind, is precisely what we must take it as, in different contexts. Truth is what we mean as we systematically strive to imitate the intended object. What makes our knowledge so phenomenal and instrumental lies in what it must omit, rather than

in what it says. Our selection is not adequate to the richness of reality. We fail to exhaust the continuities of nature and the manifold of the world we strive to share. And while our conceptions help to piece out our perceptions, still our results are proximate and pragmatic. For the purpose of prediction and practical control, we emphasize the common and uniform. But we pay dearly for our invariants in omitting the fleeting values and meanings that give each moment its concreteness. This is especially true in dealing with the world of selves, past and present. For such concreteness we substitute our averages, our classificatory systems, our space and time series. We split the universe into special departments, with their partial hypothesis, to meet our needs and limitations. It is this selective and abstract character of knowledge that makes it seem so gray compared with the glow of life.

> Grau, teurer Freund, ist alle Theorie
> Und grün des Lebens goldner Baum.

But it is also this that makes it so convenient an instrument in finding our way from fact to fact and in meeting the complexity of life. The unique and individual shades of meaning, the fleeting rainbow hues of the moment, each will must acknowledge or supply for itself.

What meaning we are justified in attributing to this acknowledged reality depends upon the functional agreement of ideas with further experience. This reading, however, is not a matter of our observing brain changes, but of observing conduct. We do not, unless we are psychologists, consciously watch other people's bodily symptoms and compare them with our own, even were this possible. Differential reaction goes hand in hand with

differential meaning, long before we reflect. Through a long process of survival selection and through social imitation, we have come to react spontaneously upon certain situations, including the behavior of other human beings. In higher mind-relations, this means an immediate interpretation of language. This is what gives the intuitive character to all our normal interpretation of other selves. We start with an implied hylozoistic philosophy of the world, which we afterward individualize through experience into objects with more or less definite differential significance — the world of selves and the world of things, the world of teleology and the world of mechanism, with their specific contexts.

TRUTH AND METAPHYSICS

The persistent effort to see the various contexts of the world of objects as one pattern, the divine love for the wholeness of things, we call metaphysics. This raises the question: Is metaphysics a science? From time to time the controversy breaks out as to whether metaphysics is science or poetry, whether it deals with evidence or whether it is a realm of free imagination, limited only by its own internal purposes and the law of consistency in working them out. If one looks back over the history of metaphysics, one can find ample reason for such a controversy. Metaphysics has too often attempted to spin its spider-web of logic from its own *a priori* demands, with not only a neglect, but often a conscious disdain, for facts. History and science have been fitted alike into the philosopher's *a priori* models. But whatever may have been the sins of metaphysics in the past — and for them it has duly suffered — we are now agreed that it must proceed by the same

methods as science, not by dogmatic conviction, but by tentative hypothesis and verification. This is at least the import of the pragmatic movement. It differs from other sciences, not in its method, but in its intent, in the problems it sets itself, viz., the final interpretation of knowledge and the other overlapping problems of experience, which lie outside the special sciences.

What has inspired the controversy recently, however, seems to be not a question of method, but of value. It has been pointed out that the large generalizations of metaphysics furnish a distinctly esthetic value and that this is the characteristic thing about them. But then why is not all science a branch of art? It is a long time since Plato felt the kinship of truth and beauty and since Lotze pointed out that the feeling for unity, which furnishes the motive and joy of science, is an esthetic feeling. However, while we recognize identities, we must not neglect differences. No doubt science and esthetics are fundamentally the same in their instinctive demands for unity, distinctness and simplicity. But the *limitations* which are recognized in art and science are vastly different. We do not insist that art shall be capable of verification in the sense that science must be. The former must minister to the instinct for the beautiful, and must do so by eliminating the accessories and selecting the relations which fit that instinct, while science must deal with the world of fact and ascertain its constitution. Both are selective. Both idealize their world. But while science seeks its verification in the world of existence, art seeks its verification in the growing meaning and unity of human attitudes.

Metaphysics is simply the attempt to find out the truth about reality — not truth for a certain purpose merely, but

what we finally must think about our world. Reality is non-communicative sometimes, like a man who refuses to be interviewed — well, then like the reporter, we have to write up what we think about it from such external marks and probabilities as we can find, not what it thinks. In any case, philosophy, like the enterprising newspaper, has to get out a good many editions to keep up with the procession of history.

CHAPTER XVI

METAPHYSICS — THE OVERLAPPING PROBLEMS

THAT there should be confusion about metaphysics in the popular press is as excusable as it is incurable. No doubt popular opinion has its implied metaphysics, too, but its ignorance of language is equal to its ignorance of science. That reputable writers on science, however, should continue to use metaphysics as a name for the occult and unknowable on the one hand and the fictitious on the other, would be unpardonable except for their neglected education.[1] Such misunderstandings make it imperative on the man who has the courage to acknowledge the name of Metaphysician — as scorned as the name, Sophist, of old — to vindicate his field. Alas, he must do this not only against the outside world, but against certain flippant colleagues of his own, who have proven false to their own vocation.

I

In the first place, I want to correct the impression that metaphysics is a rare out-of-the-way thing, which only a few moss-grown, more or less fictitious professors, have. We all have it. Common sense, with its implied dualism

[1] Two otherwise splendid articles in the *Hibbert Journal* illustrate well the above confusion: "Atomic Theories and Modern Physics," July, 1909, and "The Metaphysical Tendencies of Modern Physics," July, 1910. Both by Professor Louis T. More.

or materialism; the agnostic, with his hide-and-seek game with the unknowable; the professed scientist with his fundamental assumptions — they all have it as truly as the systematic idealist or realist, only popular metaphysics is inconsistent and inarticulate.

First of all, let us define what we mean by metaphysics and metaphysical entities. Metaphysics means the systematic difference that facts make to each other and to our reflective procedure. It is what facts must be taken as in the *entirety* of our experience and not merely for a conventional purpose. For the purposes of prediction, it may be convenient to reduce time to space units. But what does time really mean in relation to our conduct? Why do we have to take account of it at all? For census purposes, it may be sufficient to take people as numerical units, but what are they really in relation to other individuals in their endless variety of social contexts?

If we must assume free space to meet the facts, then free space is real. And it has the properties we must assume. Professor L. T. More says: "Direct evidence shows that kinetic energy is propagated through what experimentally must be regarded as empty space. This energy, called heat and light, passes to the earth from the sun, but is neither absorbed or otherwise modified until ponderable matter is encountered."[1] The "infallible" Michelsen could find no difference that the ether makes to the movement of the earth. If by further investigation, science finds no contrary evidence, we may take it as metaphysically proven, then, that free space exists, and that there is no ether. On the other hand, to show that for certain purposes we can ignore the existence of ether; that for some purposes, we can treat it

[1] *Hibbert Journal*, Vol. VIII, p. 816.

as having one set of properties and for another a different set — this is not metaphysics. We cannot *believe* in the existence of an entity for one purpose and not believe in it for another. The real object and its properties do not vary with our cognitive attitudes. Such description, therefore, must be regarded merely as a convenient symbolism. Metaphysics does not mean truth for a certain purpose. It means *correlated* truth — truth that can be taken as the same throughout our reflective procedure. However convenient it may be to divide our problems, there is not one truth, as regards the same objects, for chemistry and another for physics. Opposed to metaphysics, then, we have — not science, but provisional and conflicting sciences.

Take Huxley's hypothesis, so current in recent physiology and psychology, that mind is an epiphenomenon, *i.e.*, not an energy which can make a difference to other energies, but a mere chiaroscuro, or incidental display — the head-light of the engine, which indicates the movement but does not make it go. Now such a theory, if stated as the truth about mind, is metaphysics, however violently anti-metaphysical the author may profess to be. Every theory must be tested by its consistency with our total experience, past and present. If it tallies with that, we must all believe in it for the time being. Unfortunately, this theory seems to be based on certain assumptions rather than the plain facts of invariable antecedence and consequence or what we must take the body-mind relation as being in experience. According to the impact theory of motion, it seemed absurd that mind — ideas, feelings, etc., should push the elastic balls which we call molecules. But we have now had to revise our impact theory for other reasons — the action of electricity, for example;

and so the imagination no longer trips itself up with its own pictures. Such a theory as the materialistic theory of mind, therefore, is very unmetaphysical. It may be convenient to treat mind as making no difference for certain purposes, physiological or chemical, but it does not hold in the larger context of experience. *Ignoring* mind or any other fact as a convenience for a certain abstract purpose is not anti-metaphysical. It simply lies outside of metaphysics as the systematic truth of experience.

Take still another scientific theory of the last generation, the Darwinian theory of the origin of species, as based upon accidental variation and survival struggle without the transmission of acquired characters. If this theory really holds, if we can satisfactorily meet the facts of life that way, then it is a metaphysical theory. If we simply take it as a convenient hypothesis for biology, which leaves chemical and psychological and ethical problems still in abeyance, if indeed it does not conflict with them, then it is provisional science and its claim must be held in the balance with other claims for eventual adjustment. If, as some biologists have come to feel, it is inadequate to the needs of biology: if we must assume a formal factor in evolution and not merely accidental variation; or if we must, perhaps, assume organic memory as the basis of cumulative differences — if, in short, the hypothesis fails to meet the intended facts even for its biological purpose, then the hypothesis is unmetaphysical.

Nor does metaphysics have any more sympathy with dogmatic and irresponsible agnosticism than with spurious scientific generalizations. That our knowledge is very limited, is forced upon any sane man by experience. Relative agnostics, all truth seekers must be. We know

only in part. Therefore, metaphysics as the legatee — the clearing house of the special sciences — must be modest and tentative. But in so far as we can proceed systematically, on the basis of a certain theory, it *is* really true. Reality conspires with us for the truth. It is not a lying demon, bent on withholding the truth. So far as our knowledge is workable, it is of the tissue of reality, however selected and abstract it must be in order to serve the needs of prediction and life.

To speak of unknowable forces and causes, as some of our colleagues do so flippantly and with such an air of scientific superiority, is as unmetaphysical as it is unscientific. Metaphysics, no more than science, is concerned with the unknowable or occult. It postulates, with all truth seeking, that truth is theoretically possible, and, in part at least, practically attainable. There are no hidden essences of things. Reality, whether mind or matter, is what we must take it as in the systematic procedure of experience. The real appears for just what it is, in its various relationships. It is for science to tabulate these relationships, and, as far as possible, unify our experience of them — not to invent superstitious doubles — always keeping in mind that only in the unity of the procedure of experience does the real truth lie. There is no truth for a merely split-off purpose, or portion of experience.

We are not ignorant of causes, if we know what they *do*. Electricity is just what it shows itself as being, through its operations, under definite conditions. To say that we know what a force does, that we can tabulate and predict its behavior, and yet be ignorant of its character is a contradiction. It is the gratuitous inventing of a hidden essence

and then, by definition, asserting that we can't know it. We know the character of electricity and we know its transitions when we know its *conduct* under stated conditions. The figment of certain inscrutable essences or causes survives at the present time only in the brains of certain physicists. Metaphysics learned as far back as Berkeley, not to go back to the Middle Ages, that assumptions are not to be multiplied and that hypotheses which make no difference to the procedure of experience must be eliminated.

We see now the scope and function of metaphysics. We see that, if it must necessarily wait upon the special sciences for much of its material, they do their work only poorly, if they neglect it. And fly it as they may, it is the wings. It consists in the final beliefs and attitudes towards our world, no matter what name we give it. That it must, in large part, wait upon the special sciences; that the properties and relations of things, as well as of minds, can only be truly ascertained under those determinate conditions which the special sciences investigate, will be admitted by all. On the other hand, metaphysics, as itself a special science, need not wait until the other sciences complete their task. It must continually criticize and clarify their overlapping problems, whether this is done by the specialist himself or by another party who goes over his results. Moreover, metaphysics may do its work in part in advance of the special sciences. It is the oldest of the sciences. The interest in the general perspective came first — the overlapping principles which the Greeks outlined for pretty much all the sciences. They discovered the basic presuppositions of scientific procedure or the laws of logic; they discovered the general postulates of the physical sciences,

such as the conservation of mass, property and motion; the concept of equivalence, etc. They discovered the conception of proportional variation as basic in chemistry, however crude the four elements of Empedocles. They discovered, too, as early as Anaximander, the concept of evolution as based upon the selective adaptation to environment. They discovered the laws of association in pyschology and organized the central principles of ethics and politics into sciences — all on the slenderest basis of scientific observation and with the interest of the metaphysician uppermost, viz., the interest in "the wholeness of things, both human and divine," to quote from the divine Plato.

To discover the reality of time, it is not necessary to be conversant with the difference it makes to all the special problems of science, once we grasp its real difference to conduct in any concrete domain of experience. So with the significance of causality. Causality is not a generalization from all possible causes, which we should never be able to have, but the grasping of the relation to our will in some clear and distinct instances. Only so could we have specialists in metaphysics itself.

II

In metaphysics, as in the special sciences, we must use the abstractive method, *i. e.*, we must single out the significant leadings as regards the belonging together of the large masses of facts. We have no right to import, in an arbitrary way, our own constructions into reality in its wholeness any more than into its parts. The content must first be abstracted from the world as experienced and then tried out as to its leading. Our hypotheses must be suggested by experience and must dip into experience again.

This seems, indeed, to have been the aim, on the whole, in the history of thought. The difficulty has been that, whereas the characteristics selected were supposed to have universal leading from part to part of experience, they could only serve the function of partial leadings. Thus the mechanical view of the universe has, indeed, a real basis in experience. Part of our world has the characteristics of solidity and mass and appears to act by impact. The objection to materialism is that it has made a partial character of the world do service for the whole, and has thus been forced to do violence to part of the facts.

Again, the idealistic view cannot be ruled out from the universe so long as there are minds which feel and think, whether these be animal, human, or supra-human. The only question that can be raised is not whether mind is real when it is conscious of itself — when it tries to invent theories about reality — but whether mind is a universal attribute of reality in terms of which all reality can be read. And here evidence is lacking. So with the other historic controversies about knowledge and reality; they are never wrong altogether. Their mistake rather lies in trying to make a part-truth do for the whole.

We have seen that metaphysics deals with the overlapping generalities or unities which do not come within the provinces of the special sciences. However much the superstitious specialist may revile "metaphysics," there is a dialectic in the world as experienced, which forces us out of the pockets which we have so conveniently made and makes us take account of the facts in large relations. This is noticeable in the combination of labels which the sciences have been forced to adopt, such as physical chemistry, physiological chemistry, psycho-physical organisms, etc.

It is seen, however, in an even more important way, in certain large tendencies to correlate facts, especially as indicated by two concepts, viz. energy and evolution. By means of the concept of energy and its equivalences it has become possible to string the whole world in space on one string and thus to destroy the dogmatic cleavage which in the past has tended to isolate facts into rigid departments. Mind makes definite differences to body; and immaterial energy, such as electricity, to material or mass entities. Thus we are forced to recognize, empirically as well as *a priori*, the wholeness of things in space.

Not less remarkable has been the influence of that other tendency, the evolutionistic. Especially since the impulse which Darwin gave the movement, there has been a tendency for our dogmatic verbal divisions to dissolve and for continuity of process to take the place of abstract isolation. Not only have the original biological species been shown to be a part of the same process of growth and adaptation which had long before been recognized in the stellar world; but intelligence, too, has its history; it is the proper outcome of the process which its presence serves to reveal in its true light — a process which uses mechanism as a tool in realizing its immanent end. For the tree of universal evolution, as every tree, is known by its fruit. To take account of structures and values, not merely as in natural history, but to recognize their place in the inward flow and movement of life, which is ever appropriating the past and ever pregnant with a new future; which carries within itself its own law of growth — this consciousness of wholeness in time is what distinguishes metaphysics from the partial tabulations of the historical sciences.

What metaphysics thus aims at is a larger correlation of

the sequences and values of the special sciences. Whatever is truly observed about the special facts and sequences *remains* true. Metaphysics does not transform the observed facts and values, but gives them a larger setting, and thus enables us better to appreciate their significance. In practical use, its contribution seems small compared with the special sciences; in liberal culture it far outstrips them. As Aristotle has so nobly said: "All the sciences, indeed, are more necessary than this, but none is better."[1]

It will be seen now that I thoroughly disagree with Professor Münsterberg and others as regards the relation of the sciences to metaphysics. The sciences do not willfully falsify the facts for us, by a purely artificial treatment, in the service of our practical interests. They do not merely decompose. They also unify and, in unifying, imitate the qualities and relations of reality. Science, so long as it is true to its quest, will neither decompose nor unify further than the facts dictate. Partial its hypotheses often are, and often conflicting, too. But the *aim* of all the sciences is the coöperation toward a unified perspective of experience, the discovery of how we must take our facts in their total relationships. Hence, their fundamental aim is metaphysical. So far as they go, at any rate, they mean to discover how we must take our world. For we cannot adjust ourselves to our world on the basis of arbitrary symbols or pictures. These are serviceable, if at all, only because they serve to indicate to us the specific procedure of reality and so enable us to regulate our conduct accordingly. The constancies of science must be identities taken out of the matrix of changing reality, to help us in meeting its demands. Truth is not *falsification;* it is *identification.* It

[1] "Metaphysics," Book I, Ch. II, paragraph 10.

is because we can recognize the character of nature as in some respects the same in the flux of situations, that we have prediction and control.

We see thus that our theory of knowledge and our theory of reality are inextricably inter-dependent. For we know reality only as the differences, quantitative and qualitative, which it makes to our systematic conduct. And, on the other hand, reality is precisely what we must take it as, in our systematic experience, whether we are dealing with things or selves, facts or values. Knowledge is but the sorting of reality, however partial and abstract such sorting may be. Reality, with its identities and differences, is precisely what dictates our procedure in realizing our will. It is what it is known as, in so far as our knowledge is thorough and systematic. To suppose that knowledge alters the character of reality is to cut ourselves off from all access to it, whether scientific or metaphysical. The much talked of phenomenality of knowledge is merely its partiality — its impatience and failure to take facts in their systematic togetherness. This, however, does not rob the aspects, truly observed and described, of their reality. The assumption that the outer context of perception is less real than our inner context of appreciation is a confusion of existence and value. It is in the inner context we must seek the *significance* of reality, but not necessarily its *existence.*

III

In conclusion, what are some of the types of overlapping problems with which philosophy must deal? There are three fundamental types of such problems: the problem of knowledge; the problem of existence, or what sort of

beings and relations there are; and the problems of value, or what internal unity such facts have. It is to the last two types of problems that we ordinarily give the name of metaphysics. With the overlapping problems of knowledge we have already dealt in the preceding chapters. We have dealt with the genesis of the intellectual categories, with the psychological and formal nature of truth, with the criterion of truth, and with the relation of truth to its object. These are problems with which the special sciences cannot deal, but they are, nevertheless, of the greatest importance for intelligent scientific inquiry. It is not an accident that most of the names of the special sciences end in the term logic or knowledge. Logic, in the broad sense of a theory of method and of knowledge, does indeed overlap all of them. They are all part of the game of truth and must obey the rules of the game; the limitations of the game are their limitations.[1]

There are, further, the problems of existence and the problems of value, with which metaphysics, as a science, deals.[2] First, what final types of being must we acknowledge in our adjustments to the world as experienced? What stuff are things made of? How must we take the world of processes?

In the first place, experience up to date indicates that however diverse processes may be, they can make differences to each other. Causality does not require, so far as we can see, identity of stuff. Electrical processes can make predictable differences to mechanical and to mental, etc. The

[1] For a brief statement of the problem of knowledge, see the first part of the next chapter.

[2] I may say that the fundamental concepts of reality which I shall mention here in a brief and dogmatic fashion are dealt with at length in a volume entitled "A Realistic Universe," soon to appear.

ability to make predictable differences we call energy. So this serves as a convenient name, however thin, for the whole world of process. These energies are capable of being classified into classes or groups. It seems that we can simplify our energies into three of these — the mechanical energies, involving mass; electrical energies, including light and magnetism, where weight and mass do not apply; and conative energies or the differences that our minds can make to each other and to things. Of course we have attempts at still further simplification. The idealist would reduce all processes to the mind type. But here we are confronted by the lack of evidence as regards the simpler processes of the world. Some physical theorists, again, would reduce all mass energies to the electrical type. But even J. J. Thompson has recognized the impossibility of accounting for all of mass on the electrical basis. This threefold division, therefore, seems a convenient halting place for science; and, if so, for metaphysics, because metaphysics, too, must follow the lead of induction. It cannot make its own facts.

With the problem of stuff goes the problem of interaction, for we know stuff only by the differences it makes. If metaphysics has not solved the question how certain made-to-order entities can influence each other, how mechanical entities, such as atoms and molecules can interact with psychical entities, such as thoughts and feelings and *vice versa*, how material entities can make a difference to immaterial, if it has not answered our ancient questions about motion, it has done what is better: it has shown that the questions are mostly useless, and that the absurdities to which they lead are due to our concepts, not to the irrational procedure of reality. It is not for us to dictate

to reality what *can* happen or how it *can* act, but to take account of the differences which the parts of reality *do* make to each other under definite conditions. And if our assumptions make such differences absurd, then we must revise our assumptions. The invention of cleavages and parallelisms in reality to correspond with the discrepancies of our assumptions, and thus ruling nature's seeming continuities out of court, may be a proof of ingenuity, but not of scientific sanity. As regards the external interrelations of the parts, as well as regards the nature of their stuff, they are precisely what they must be taken as in the definite situations of experience.

As regards time, another overlapping problem, it seems clear that we cannot reduce it to quantitative units. These are merely tools for predicting the flow. Time must be identified with the variation of positions, not their static relation. While there is a high degree of constancy making prediction to a large extent possible, time seems to introduce an element of contingency and novelty, requiring fresh adjustment. At least that is true for our finite experience. In any case, time is involved in the moving of the scenery, not its static relations.

As regards space, I would agree with Ostwald that "empty space is known to us only by the quantity of energy necessary to penetrate it, and occupied space is only a group of various energies." But in either case, space as distance makes a positive difference to the interacting energies. And this is the only difference space makes. Such attributes as free mobility and absolute conductivity are negative. They mean the absence of energetic interference.

It seems convenient to separate consciousness from the energies — taking consciousness as the condition of aware-

ness, given a certain complexity of structure, physiological and mental. Consciousness is such an independent variation, if we must thus take it in the unification of our experience of our world.

Finally, we have the problem of value. The human mind is so constituted that it cannot stop with the mere ceaseless flux in time or the mechanical interaction of parts in space. It asks about the why and the whither. Even Heraclitus sought for a law of change, an inner unity running through the scattered parts of experience, guiding the play of chance. And while we cannot regard this unity as superimposed mechanically from without, as in the case of Paley's watchmaking god, nor regard nature as working with a definite model in mind, according to the superficial interpretation of final causes, yet we must believe that the universe, somehow, is to be judged by its outcome and that those ideals of self-criticism and appreciation which the universe in its more developed stages holds up to itself are not accidents, but in the deepest sense nature's self-realization, that liberation which is dumbly striven for — the guiding impulse of the long groping history of evolution with its repeated trials, failures, and fixation of types.

We must recognize that the universe has form or significant connection; that its processes do not happen by mere accident; that evolution is not bare chance, for if there is no form or order in reality, our own reasoning about it will be irrelevant. Therefore, to attempt to reason or to have science becomes contradictory. It would seem strange, too, that reality should develop these formal demands, if they are not somehow germane to it and selective in its evolution.

These are suggestions merely; only some of the many overlapping problems. Moreover, all the investigations of the special sciences as regards the specific procedure of reality increase our metaphysical knowledge. For metaphysics is only knowing consistently and truly the relation of our objects to our conduct. The qualities of things as well as their existence are known through the differences they make to the systematic procedure of human nature. Speculations outside of that, whether concerned with the natural or supernatural, are not metaphysics — they are nonsense.

CHAPTER XVII

The Reality of Religious Ideals

Not the least significant fact of this great scientific age is its deep interest in religion. On the one hand, in spite of serious protests from the conservatives, science has established its right to apply the same method to the study of religion which has been of such great service in reducing the facts of other fields from chaos to order; and thus we have Comparative Religion, Higher Criticism and the Psychology of Religion. On the other hand, attempts have been made from the philosophical side to furnish the same rationale for the ultimate religious concepts as for the scientific. The import of this has been, not to show that both sorts of ideas are ultimately equally invalid, equally lose themselves in the unknowable, as in the dark all cows are gray; but to show the legitimacy and importance of both in steering us in the direction of the real. What I am concerned with in this chapter is to inquire into the validity of our religious ideals; but to do this I shall have to inquire first how any ideals become valid. If this seems a roundabout way, I still feel that it is the shortest way to reach the end in view.

I

The final problem which any theory of knowledge must attempt to solve is: How can ideas or concepts, which are merely structures of my mind, modifications of my brain

and carried about in my head, mean or express the real nature of the world? To do justice to this problem here would be to furnish a complete system of epistemology and metaphysics. The limitation of our task makes this impossible; at most we can furnish only mere suggestions. We are concerned with the problem of knowledge in general only so far as this is involved in our more specific problem, namely, the real basis of our religious ideals. The first question, then, which we shall attempt to answer in barest outline is: How do concepts, structures in our mind, crystallize or *thicken* into being, become objective fact? And the second, more special one, is: How does the criterion of the objectivity of concepts in general apply to the religious ideals?

One of the most suggestive things in modern philosophy is Herbert Spencer's definition of life, as "the continuous adjustment of internal relations to external relations." "We perceive that what we call intelligence shows itself when the external relations to which the internal ones are adjusted begin to be numerous, complex, and remote in time or space; that every advance in intelligence essentially consists in the establishment of more varied, more complete and more involved adjustments; and that even the highest achievements of science are resolvable into mental relations of coëxistence and sequence, so coördinated as exactly to tally with certain relations of coëxistence and sequence that occur externally." And again: "Any assumption is justified by ascertaining that all the conclusions deducible from it correspond with the facts as directly observed; by showing the agreement between the experiences it leads us to anticipate and the actual experiences."[1] Or, as Professor

[1] "First Principles," Ch. IV, "The Relativity of Knowledge."

James would express it: Our ideas are valid when they are "coterminous" with perception or fact. Our idea of an eclipse is true when our anticipation of it in space and time ends in the facts of the eclipse.

Life and knowledge are essentially adjustments to a larger world. The springs for such a process of adjustment must be found in human nature. Modern philosophy and psychology alike emphasize that we are essentially active or willing beings, beings with desires to be satisfied; and we are dependent upon the environment for the satisfaction of those desires. Our impulses or affections, as Butler pointed out long before Darwin and Spencer, are centrifugal; they point to objects beyond themselves for their realization; human nature as such is fragmentary, and points to a larger world for completion. Only in so far as the smaller system is adjusted to the larger system can our desires be realized. But how can the smaller system ever know anything about the larger and thus properly adjust itself?

The English empiricists from Locke down are right in emphasizing that our adjustments are the results of experience. Our instinctive tendencies would remain at best vague and inchoate if it were not for individual experience, which serves to make them definite. It is by continuous attempts at adjustments, the fruitful adjustments surviving as exciting interest or gratifying desire while the vain ones perish, that the organism learns gradually what are the proper adjustments. It is only on the level of our ideational adjustments, however, that the question of the true and the false arises. The fruitfulness of these ideational adjustments is one evidence, at least, for their truthfulness. While not all fruitful ideas are true and not all

true ideas are useful, in the long run such fruitful adjustments must be true to the character of reality. If deception and illusion worked as well in the long run as truth, science would be in vain; for falsehood is infinite, and there can be no science of falsehood. The usefulness of deception must always be for a limited purpose, due to the imperfect development or pathological condition of human nature. Just as, on the whole, pleasant things are wholesome, so, on the whole, useful ideas are true, though in either case there are temporary exceptions in the evolutionary process; in either case we must supplement experience with further experience.

What the early English empiricists neglected, in their eagerness to show that we learn by experience, was to answer the question: Who am I? — to define the individual. They emphasized the part played by the environment at the expense of the individual, his tendencies and needs. The ego was to be a mere passive tablet, a piece of white paper, upon which Nature could write her sequences. This implied that the ego must be a mere nothing in fact, as Hume points out, a mere result of association, a "bundle of perceptions." But in that case there was neither any need nor any possibility of adjustment or knowledge. If the individual centers are nothing, we have a lot of nothings playing on nothings, and the environment has vanished with the individual. Thus Humean empiricism would reach its logical bankruptcy.

It was at this point that Kant took up the problem. Kant emphasized the dignity of the individual at the expense of the environment. The mass of sensations or data which are thrust upon us could present no order or meaning as such. The laws and system of the data are the

work of the subject, which confronts the environment with certain predispositions, certain ways of looking at things. It is a matter of wonder to the naïve Kant that the data conform so obediently to the order forced upon them! For *we* make the system of nature. What makes nature seem so objective is that we all agree in making it in the same way; it is a sort of social collusion. But the environment takes revenge for this violence upon it. If we insist upon making Nature according to our models, she will refuse, at any rate, to tell us anything about herself, and thus leave us to the solitude of our own fancies. When Kant attempts to distinguish between empirical causal relations and causality in general as dictated by the subject, his system utterly breaks down. If particular causal relations must be ascertained through experience, what remains for the boasted category of causality to do? Thus Kant, in giving arbitrary priority to the individual subject, lost all real access to the environment.

In this dilemma the theory of knowledge remained substantially until the evolutionary movement. Both Hume and Kant emphasized important aspects of knowledge: we must learn from experience the real character of nature; and yet we can only get out of nature the meanings or laws with which we confront it. The abstract methods of Hume and Kant could not overcome this antinomy. Both neglected the problem of the genesis of knowledge, in the light of which its nature must be interpreted. The two positions can be reconciled only in a more concrete theory of the individual, which takes account of the nature of the individual as modified by history.

This history is as old as the universe in its changes of cosmic weather — for old as star-dust is mind-stuff, old as

existence are ideals. True, we have no right to read the meaning of the later and more complex stages of history into the earlier and simpler ones and speak of inorganic nature in terms of will or reason, as animistic philosophers are fond of doing. It is to us, the spectators, that the simpler stages have meaning or purpose. Yet we believe that the simpler ones are continuous in one history with the more complex ones, that the whole process is obedient to one direction; and though we cannot reproduce even problematically the content or meaning of the simpler stages, we can at any rate to some extent reproduce their external or phenomenal form. What we must emphasize is that we, as thus conditioned by race history, are subjects, conscious egos, possessing properties of our own, capable of certain habits or adjustments as regards the environment, and not the mere passive result of mechanical laws, a chance conjunction in the dance of atomic elements, whether sensational or material.

When the individual history of human organisms begins, a certain structural differentiation, as a result of the survival process of evolution, has already determined for us our general data of a world. Our sense-organs admit only of a certain kind of diversity; they are tools for picking out a certain range of data as "signs" of the energies of our environment. Not only our data, however, but our capacity for reacting, both in general and in more specific directions, has already been determined by the character of the nervous system. We start upon our brief human history with a certain temperament and endowment; but more than that we possess an equipment of certain dispositions or tendencies, needs or demands, which must be satisfied. In these we reap the results of past adjustments from a race history

indefinitely old. And while these results are not experience, not innate ideas, they serve to economize experience. They furnish us with the warp for which individual experience must furnish the woof. They are general docilities which can be made definite by being consciously tried out.

These tendencies may be merely individual and material, such as the tendency to self-preservation, characteristic of all life, and, we might say with Spinoza, of physical things, too. Or the tendencies may lead to social satisfaction. They may be a craving for friendship, a taste for music, a feeling for consistency, a sense of right, or a yearning for the supernatural. The special adjustments or tools for the satisfaction of these tendencies have already to a large extent been provided for by the order of things into which we are born. By our tendency to imitate we become familiar with the adjustments of society, its knives and forks, its laws, its science, its religion. In the course of this imitation which we call education, we discover our own meaning or purpose—ourselves. We contribute our own reaction or interpretation to the past. But whether our adjustments are the result of inherited dispositions, or of imitation, or of purposive experiment, what determines the repetition or survival of an adjustment is its capacity for ministering to the needs of the individual and the race.

How far our adjustments or dispositions are *a priori*, in the sense of inherited, or are acquired within the history of the individual organism, we are not at present in a position to state, and perhaps never shall know; but one thing is certain, when we begin to be conscious of what we are doing, to reflect upon our own acts and processes, we do find ready-made a complex set of adjustments or dispositions; experience has already taken on certain forms or serial arrangements; we

look for certain connections and continuities between phenomena. Hence the *a priori* categories of men like Kant and Schopenhauer. We awaken to that yearning for the wholeness of things which intoxicated Plato; we recognize certain demands for consistency and beauty, which both outstrip and set the program for individual striving. That these adjustments or dispositions are the products of the interaction of the organism and the environment, physical and ideal, through the history of the race; that the environment has dictated to us what dispositions we must entertain to *survive*, long before our dispositions begin reflectively to dictate to nature what it shall *mean* — this is the contribution of the evolutionist movement. To supplement the empiricism of Locke and Hume, therefore, we must first recognize an instinctive structure with its tendencies, a subject capable of cumulative adjustment, and then substitute for the history of one individual experience the history of the race. In order to learn from experience, we must be equipped with mines of tendencies or interests which the energies outside us can touch off. Nature can only become real to us by passing through human nature.

In all our adjustments, whether they are self-conscious or merely sentient, is involved trial, or experiment. Knowledge, too, starts with certain guesses, certain random efforts, spontaneous constructions — those surviving, on the whole, which issue in fruitful results. And the results become fruitful because the adjustments are made with reference to the character of reality. The organism must take account of the diversity, as well as identity, of the environment; in other words, for the mental adjustment to become fact or to be successful, the *meant* identity or

meant diversity must coincide with the *objective* identity or diversity of character. This aim at adjustment may be found in all stages, and may take account of a very abstract and immediate aspect of the environment or may aim at a very concrete and remote environment. Nor can we be neutral as regards reality beyond us, as we might be if we were merely bundles of perception or logic machines. We are bundles, not of perceptions, but of desires. The necessity to act in order to survive makes it impossible to be indifferent as regards our environment. And our actions imply certain beliefs with reference to the bigger world — the environment which we confront, whether we are conscious of those beliefs and whether they are those we profess or not.

How can we bring these beliefs or hypotheses to the test? How can we know whether they are the mere constructions of our brain, mere symbols, or whether they also express the character of reality? We have two ways of testing: one is a subjective way, referring to the proper functioning of our own thought; the other is objective, or refers to action. Ultimately, the two must coincide. The subjective criterion is that of consistency. Contradictory judgments cannot both be true. If I make the judgments that a house is red and that it is not red in the same respect, both judgments cannot express fact. But mere consistency does not make our ideas objective. Nor is social agreement sufficient to constitute objective fact. We can agree as to the meaning of centaurs and mermaids and a geometry of n dimensions. Yet this agreement does not constitute them objective facts. Ideas to become objective must not merely be consistent and capable of being agreed upon: they must lead to certain consequences of perception and action. If

we can act *as if* a certain faith is real, if the environment responds to our action by ratifying our will, then our faith crystallizes into being and ceases to be mere faith or subjective attitude. We have hit upon the meaning, the real character, of our environment. Hence our environment responds by granting our request. Truth, finally, must be tested through the consequences in the way of conduct or procedure to which it leads — provided that we include in these both the difference which the object makes to our individual nature now and the ratification of further experience, the latter coming in only as a proviso, necessary at any one time, owing to the finitude of human nature and the fluent character of reality. True, sometimes our response takes the form of intuitive certainty, the net result of race history; but this certainty must in the end be capable of being tested in the procedure of experience — even the golden rule and the venerable axioms of geometry.

In the degree, then, in which we can act *as if*, we have hit upon the true meaning of the environment; we can dictate to it because it has already dictated to us. Most of our guesses or faiths as regards reality are only partially responded to; we can only in part act *as if*. We can only act, perhaps, as though our faith were real for a certain abstract purpose. However, in so far as the environment responds even for the abstractest purpose, our idea or faith must embody an essential aspect of reality. Thus the atomic theory serves admirably for the grosser purposes of chemistry, while, in its classic form at least, it breaks down for certain phenomena of physics, such as electricity. Hence its truth must be regarded as partial. It does not express the whole truth of the character of the physical world; yet it does embody an essential, if abstract, aspect

just in so far as we can act as if the world were made that way and get our results. If we take the ether, again, we find that for certain purposes it has been treated as a perfect fluid and for others as a perfect jelly. We have here apparent contradiction in the assumed substrate of phenomena, yet both beliefs with reference to it lead to fruitful consequences. Hence the abstract partial aspects must each have its right; and a concept must be possible that embodies both characters without contradiction. When we can form a concept, a mental construction, on which we can act consistently as if it expressed the essence or nature of reality, then this ceases to be mere belief or idea; it thickens into being, it *is* reality. Reality then conforms to our categories or ideas because these have been adjusted to it. It should be added that knowledge becomes exhaustive only when we deal with objects which are themselves meanings. Any number of people can have the reality of Hamlet.

It has been fashionable of late to speak of concepts as shorthand, merely convenient symbols, but without relation to the real world. In so far as they are mere subjective guesses, and reality refuses to respond to them, to behave as if they were true, in so far we may speak of them as mere shorthand, mere symbols. But in so far as they become convenient, in so far as they form the basis of prediction, just so far do they cease to be mere shorthand. They must seize upon characters of reality in order to be serviceable, even though in the case of physical nature these characters are to-us-ward and do not reproduce or copy the inner reality of the process, and so do not completely thicken into being, but must be regarded as instrumental — good instruments if they work. So far as regards

the real or inner nature of the environment, we must act by faith, not by sight. Our sensations as such are dependent for their character not merely upon the environment, but also upon our psycho-physical organism, and at best they are but signs of what we intend. Nor can the real character of the environment be ascertained by mere thought, as Plato supposed, but by thought or creative imagination that realizes itself in action. Our ultimate clew to reality is that it behaves as if it conformed to our idea of it; when that happens, our constructive imagination must have succeeded in divining it or hitting it off, or succeeded so far as our finite limitations permit. How complex this environment shall be assumed to be, what diversity it shall possess for us, depends upon how we must regulate our conduct to obtain the satisfaction of our will. If we must act as if there were other individuals, other relatively independent centers of activity, then there *are* other individuals; and their *character* must be such as we must adjust ourselves to, in order to have our expectations of them realized, in order to live properly. If we regard the physical world as mechanical, as mere means to an end, whereas we recognize human beings as ends in themselves, it is because only by distinguishing such objective values we attain the satisfaction, or good, of our will. Thus both the diversity of existence and the diversity of meaning, as regards the bigger world, are known through the differentiation of the activity of the subject, necessary in order to accomplish its end.

It is the plurality and changeability of our world that divorces truth as a mental structure from the characters of the reality it means. Our meanings must readjust themselves to their changing objects or else prove false. On the other

hand, truth could not mean reality, could be nothing but mere shorthand, unless our mental structures were continuous with their environment. Here we seem to have an antinomy. Both discontinuity and continuity seem to be necessary in order to account for the nature of truth. Monism, by affirming the unity of the world as a static whole, has failed to account for the relativity of truth as it attempts to express fact. Pluralism again, of the old-fashioned type, with its indifferent substances, made unity or continuity impossible, and hence made knowledge impossible. Both unity and plurality, continuity and discontinuity, must be true of the real, though under different conditions, because we must act as if they were true in order properly to adjust ourselves to the environment. Both, however, must be relative. The concrete truth must be somehow a universe of process with diversity of structure; with relatively stable centers that can interact and, in a measure, picture each other; of continuities and discontinuities according as the conditions are present or absent for connecting certain energies. If we must adjust ourselves to it as if it were such, then such it must be, even though we may not now be able to explain how it is so.

II

How does the above teleological criterion of being apply to the religious environment? We have seen how the mind has constructed for itself and projected a world of ideas in order to meet its environment, and said, "That art thou." In so far as its prediction has been verified and the proper adjustment thus obtained, the environment has replied, "That am I." The character we have given this environment has depended upon the needs of the soul to make itself

at home in the world, to satisfy its wants. The environment again has reacted upon the adjustment and shown how far it has been adequate. Thus we have come to construct an inorganic, an organic and a supra-organic or psychic environment, each of which grades of environment has proven its reality by the necessity of adjusting ourselves to it in order for the highest well-being. But in this historic process of adjustment even the psychic environment of social unity has proven inadequate without the faith in an ultimate spiritual environment which shall be the objectivity and fulfillment of our fragmentary human ideals. Thus the soul of man has built itself nobler mansions, has constructed the ideal world of religion, even as the swallow builds herself a nest in order to feel cozier and more at home in an otherwise cold world. Now, does the religious ideal of a realized good in the world have any real basis, or is it but a fond dream? Is there any environment beyond and still higher than the supra-organic or social environment, already so difficult for us to grasp and yet so real? Man has at any rate acted upon the belief in such an unseen environment, higher than the human, and persists in doing so. Is there any justification for this?

The same criterion must be applied to the reality of the religious environment as has been applied to other kinds of environment. I can see no intrinsic difference as regards the test of religious concepts or hypotheses from the test of scientific. The former are more momentous hypotheses, to be sure, but that does not alter their verification. Science, too, is fundamentally built on faith, a faith built on very slender evidence — the faith that this Chinese puzzle of a world can be sorted and be made to fit together into a systematic whole, as religion is built upon the faith in a Power

that is righteous, sympathizes with, and works for, righteousness. In any case the idea must be justified or proved by its consequences, or its ability to satisfy the needs of the individual, or at any rate the race in its progressive evolution. As we expect the scientific demand to grow more definite and articulate in the course of evolution, so we should expect the same in regard to the religious demands. If it is a great distance from Thales to modern science, so it is a long stretch from the Book of Judges to the Sermon on the Mount. In the case of science and religion alike, immediacy — whether the immediacy of perception as in science or the vaguer immediacy of instinctive feeling as in religion — must be interpreted and corrected in the light of further experience.

The question is: Is the religious environment bound up with the history of man in such a way that he must act *as if* it were real in order to attain his highest development? If the religious ideal is bound up with moral and social growth, as well as the highest individual appreciation and satisfaction; if there is no abatement of this adjustment, but, on the contrary, if it increases in complexity and unity with the development of human life; if life would be poorer without it; if, in short, the religious adjustment has proved a necessary one, in order to attain the highest and most effective type; and if materialism fails to inspire such a type of life, then the religious ideal must in some degree possess objective reality. Here, too, we have the survival of the fittest as regards beliefs; and the history of the race might be written as the history of religious beliefs. The working of the religious hypothesis must in so far be taken as evidence of its truthfulness, just as the working of the scientific hypothesis is in so far regarded as evidence of its truth. Both

must be modified in the light of the requirements of further experience. The progressive usefulness in either case must prove the greater objectivity of the content. Can any one doubt the cementing influence of religious beliefs on social unities, or the heightening effect on morality of the faith in an impartial and sympathetic Spectator and Coöperator, or the association of religion with the highest in art? And as we learn to substitute more and more, in the progress of evolution, inner unity for mere mechanical coëxistence, are we not progressing towards the appreciation of a higher spiritual supra-individual unity of souls greater than nations and greater than humanity; a unity which is not a mere block unity, like that of Parmenides, but a unity which embodies the end of ideal striving? If it is a fact that the religious ideal is thus essential to the highest unity and development of life, then the religious ideal can be no mere shadow projected by the imagination of man; but it becomes objective; it thickens into being. It is the ultimate constitution of the cosmos.

The mistake in the past has been in trying to express the environment of the individual and the race in merely physical or perceptual terms. This would provide no standard of fitness. It would merely record the fact of survival, and stamp that fit which does survive. We must, I think, regard the kingdom not-of-this-world as no less real than the kingdom of this world; the realm of formal demands and ideals no less real than the realm of facts and impulses. And not only must the former be as real as the latter, looked at from the point of view of existence, but the former must count for more, must legislate to the latter; the ideal environment must set the ultimate survival conditions of the natural. Else the process can have no unity or mean-

ing. Else no generalization would be possible. Natural science becomes as hopeless as ethics, for both involve the axiom that the cosmic process has direction, or is amenable to certain ideals.

What has been said with reference to the existence of the religious environment applies equally to its character. We cannot agree with Herbert Spencer that utter characterlessness, existence without content, is the goal of religious progress. What possible inspiration could mere empty existence have in human evolution? The same criterion which shows us *that* God is, shows us also *what* he is. The development of religion, moreover, shows more and more agreement as regards its content. All the developed religions agree in maintaining, though with different emphasis and concreteness, certain attributes as indispensable. Thus the ideal of goodness, as the supreme factor in the religious ideal, is common to all the great religions. It is evident that the more empty and vague the religous ideal is, the less effective it is; and that, on the other hand, the religious content which conduces to the most definite understanding of man's problems and contributes most to the development of man must be most objective.

We can only mention some of the most prominent characters of the religious ideal which have proved indispensable to its historic efficiency. One is the unity of the religious ideal as opposed to polytheism, the demand for one unique and final embodiment of the highest good. Furthermore, this unity must be a personal experience, not necessarily having our limitations, but capable of entering into sympathetic relations with all good strivings, as it has sufficient power to enforce its ideal. God must not be merely an impersonal constitution. Even the atheism of classical

Buddhism could not be made practical until it apotheosized the founder.

Practical religion must, furthermore, identify itself with the values or norms of life primarily. In other words, the religious ideal must not be pantheistic. Only the finite can have worth. I do not see how any one can love or worship things in general, this medley of comedy and tragedy, of harmony and discord, which we call a world. Such a worship would seem possible only by killing the nerve of activity, by saying to the passing moment, "Verweile doch, du bist so schön," which, if we believe Faust, is equivalent to selling one's self to the devil. However satisfying such a view may be esthetically, it is not ethical. Pantheism is as unethical as materialism. A God that is identical with the totality of existence is helpless to redeem the world, as he is equally responsible for its sins and its virtues. As Plato puts it: "God, if he be good, is not the author of all things, as the many assert, but he is the cause of a few things only, and not of most things that occur to men; for few are the goods of human life, and many are the evils, and the good only is to be attributed to him: of the evil other causes have to be discovered."[1] Hence Christianity preaches a kingdom that is not of this world, a God of righteousness. "Be ye perfect as your Father in Heaven is perfect." God is identified with the absolute worth or goodness of the world, not with its mere brute existence. God is just, as identified with the realm of ideals, and as such he sets survival conditions to the lower finite centers. But the God required by human experience must also be merciful, and as such, he strives to raise our finite lives to the standard.

[1] "The Republic," Bk. II, § 379.

In this love of the perfect and striving to make the finite perfect, justice is not abrogated but fulfilled. The world consists of many centers of consciousness, who must learn to imitate, and make their own, the perfect good, each in his own way. And in this lies both the tragedy and the zest of life.

The truest and most objective religious ideal, then, is that which can furnish the completest and fullest satisfaction of the demands and longings of evolving humanity. The various religions, no matter how ancient and venerable, must submit to the pragmatic test, their ability to minister to human experience in all its complexity. Religions must not appeal merely to our credulity for the miraculous. In that case the savage religions would rank at the top; for, in the absence of science, there is no limit to the miraculous. Nor must the appeal be to a mere supernatural revelation or authority. In that case Brahmanism and the old Pharisaism would rank foremost. Religions must appeal to the good sense of man; they must increase his perspective or sanity. They must enable him to think more deeply and truly; to appreciate and create greater beauty; to live more completely and fully, individually and socially. Christianity neither can nor must claim any exemption from this test of the completest ministry to human nature. With this it stands or falls, not with its ecclesiasticism or creeds. For the Sabbath was made for man, and not man for the Sabbath.

Christianity is the highest religion to us because it, as no other, furnishes, in the simplest and completest way, that environment of the soul which satisfies and makes objective its yearning for the highest good. And inasmuch as the personality of Jesus answers all our demands for

personal goodness, as no other historic individual does — fulfills them not only relatively but completely — we must acknowledge him as divine in a unique way. He is to the Western world, at any rate, the concrete universal, the beautiful life — not only individually beautiful and complete, as a work of art, but the greatest energizing power for beauty, truth and goodness. Nor is his claim to this position waning, but ever gaining new strength in the dissolution of dogmas and the crash of creeds. And in the struggle for survival which is now going on between the Western and Eastern world, in spite of, yea from, the smoke and din of battle and secular conquest, the ideal dominion of the Galilean promises to extend itself, in the centuries to come, to the ends of the earth.

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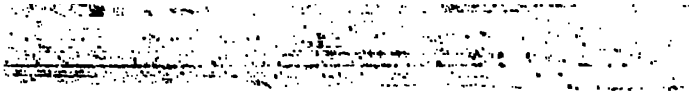

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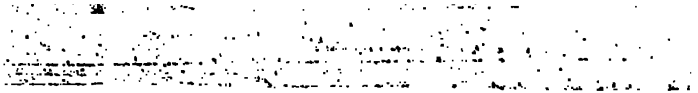

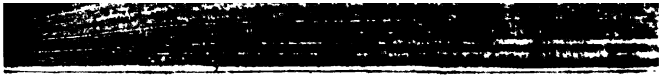

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